

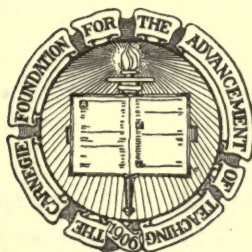


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THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

NINTH ANNUAL REPORT
OF THE
PRESIDENT AND OF THE TREASURER



576 FIFTH AVENUE
NEW YORK CITY
OCTOBER, 1914

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OF THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF LEARNING

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REPORT OF THE PRESIDENT

PART I

THE BUSINESS OF THE YEAR

REPORT OF THE PRESIDENT

To the Chairman and Trustees of the Carnegie Foundation for the Advancement of Teaching:

IN accordance with the by-laws, I present herewith the Ninth Annual Report of the President of the Foundation for the fiscal year ending September 30, 1914.

The report is confined in the main to a statement of the current business of the Foundation, but includes also, as in previous years, papers dealing with specific educational problems. The field of medical education has received particular attention. The work of the small staff of the Foundation has during the past year been given almost exclusively to certain large continuing studies that have been undertaken thru the establishment of the Division of Educational Enquiry and the results of which will appear in separate bulletins.

Of these studies the report on Education in Vermont has already been published. An account of this work, its reception by the public, and the action of the Vermont Educational Commission with regard to it, will be presented later.

The other projects under way include a study of legal education, the enquiry into the methods of engineering education, and a study of the training of teachers. The progress made upon these studies and the methods pursued are discussed in the following pages.

It is the policy of the trustees of the Foundation not to build up a large staff or to develop into a bureau. For this reason only a small number of men constitute the permanent staff of the Foundation. By the courtesy of various universities the Foundation finds it possible to arrange for a leave of absence for a professor by which he can devote a year of continuous work to a given problem. It is hoped by such a process to bring continually a new interest and a fresh point of view to the study of educational questions. For the present year, by the kindness of the University of Chicago, Professor C. R. Mann, of the department of physics, is spending a year with the Foundation in the study of engineering education, and by a similar arrangement Professor Homer W. Josselyn has come from the University of Kansas to participate in a study of the training of teachers.

The annual reports of the Foundation devote considerable space to a record of pension systems in order that the literature of the subject may be accessible. Pension systems are being inaugurated in so many ways and under such diverse conditions that some account of recent developments may appropriately be given by a pension agency like the Foundation.

The exchange of teachers with Prussia has been temporarily interrupted by the European War. No exchange teachers will be appointed for the year 1914-15.

ENDOWMENT, INCOME, AND EXPENDITURE

THE trustees held in trust at the close of the fiscal year the following securities, given at their face value:

(a) General Endowment

United States Steel Corporation 50 year 5 per cent Gold

Bonds	\$12,200,000.00
-------	-----------------

Other Securities	1,929,000.00
------------------	--------------

Total	<u>\$14,129,000.00</u>
-------	------------------------

(b) Division of Educational Enquiry

	1,250,000.00
--	--------------

Total	<u>\$15,379,000.00</u>
-------	------------------------

During the fiscal year the trustees received from the general endowment an income of \$696,038.60, and from the endowment of the Division of Educational Enquiry \$50,358.34.

The expenditures have been as follows:

(a) General Endowment

Retiring Allowances and Pensions in Institutions
on the Associated List

Officers and Teachers	\$444,966.52
-----------------------	--------------

Widows	<u>69,523.06</u> \$514,489.58
--------	-------------------------------

Retiring Allowances and Pensions granted to
Individuals

Officers and Teachers	\$99,984.68
-----------------------	-------------

Widows	<u>20,389.51</u> \$120,374.19
--------	-------------------------------

Expenses of Administration	32,910.78
----------------------------	-----------

Publication	1,758.44
-------------	----------

Total	<u>\$669,532.99</u>
-------	---------------------

(b) Division of Educational Enquiry

Salaries and Professional Fees	\$25,555.12
--------------------------------	-------------

Travel and other Expenses	12,482.22
---------------------------	-----------

Publication	8,992.08
-------------	----------

Total	<u>\$47,029.42</u>
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THE ANNUAL MEETING OF THE TRUSTEES

THE trustees held their eighth annual meeting on November 19, 1913. Principal Peterson of McGill University, the chairman of the board, presided. Of the twenty-four trustees, twenty-two were present.

In the election of officers Principal Peterson of McGill University was reelected

chairman, President Slocum of Colorado College, vice-chairman, and President Thwing of Western Reserve University, secretary. Mr. Robert A. Franks and Mr. Frank Arthur Vanderlip were elected to succeed themselves on the executive committee for a term of three years.

The resignation of President Remsen of Johns Hopkins University was presented and accepted, and the secretary was instructed to convey to Dr. Remsen the assurance of the gratitude of the board for his services. To fill the place thus left vacant, Edgar Fahs Smith, Provost of the University of Pennsylvania, was elected.

As usual, the deliberations of the trustees included various proposals concerning the administration of retiring allowances. There had previously been referred to the executive committee the question of the advisability of such an amendment to the rules as would permit a man to receive part pay, not less than his retiring allowance, after twenty-five years of service, and, on reaching the age of sixty-five, still be eligible to a pension upon the basis of pay when in full service. To this the executive committee reported adversely on the ground that the elasticity already afforded provided a sufficient relief for those cases in which the institution might desire to retire a man a few years before his period of eligibility, and that any further extension of the rules in this direction was not desirable at this time. This report was adopted.

Another proposal likewise referred previously to the executive committee involved the desirability of establishing a retirement age for women lower than that now in force. It was recognized that such a distinction between the retiring ages of men and of women was made by nearly all large pension systems, altho the question has nowhere received thorough treatment. There is a general consensus of opinion that while women, on the average, live longer than men, their period of active professional service is shorter. In the industrial pensions established in the United States by different companies, retirement for women takes place at sixty, that of men at sixty-five; and this practice represents the distinction usually made. In the elaborate system of pensions proposed for New South Wales, a retirement age of fifty-five is accepted for women and of sixty for men. In the Union Pacific Railroad system, disability pensions are given to men after twenty-five years of service and to women after twenty years of service. In the United States Steel Corporation, the minimum age of retirement for men is sixty years and for women fifty years. There are no educational pension systems in which this distinction has received careful consideration. The Virginia public school pension system offers pensions to men at the minimum age of fifty-eight and to women at the minimum age of fifty, but this system is so largely empirical that its rules constitute no valuable precedent.

In spite of the general practice, however, there did not appear to the executive committee to be justification, in the absence of statistical support, for such action in the administration of the Carnegie Foundation. In the first place data are lacking for a sound actuarial determination as to precisely what distinction should be made. In the second place the proportion of women to the total group of teachers affected

is small—540 out of 5498. In view, therefore, of the considerable increase in load which a change from the retirement age of sixty-five to that of sixty would involve, it seemed best to defer action until the matter could be further investigated by the president.

Consideration was also given to the question as to what obligation, if any, should be laid upon beneficiaries to refrain, after retirement, from further employment for pay. After some discussion the executive committee was instructed to proceed upon the principle of permitting on the part of retired professors work which is neither regularly announced in a catalogue or paid for, nor otherwise made obligatory by the institution with which they were connected.

The funds provided by Mr. Carnegie for the establishment of a Division of Educational Enquiry had already been formally accepted by the trustees thru a circular vote at the time the gift was made, but this was the first meeting at which the scope and character of the new department could be discussed. Various projects were suggested by the executive committee: a request had been made by the governor of Maryland for a survey similar to that made in Vermont; the Hospital Section of the American Medical Association and the American Hospital Association had repeatedly urged the Foundation to undertake a study of hospitals and their relation to medical schools; the American Dental Association desired a similar study.

No formal vote was taken on these matters. It was the general sentiment that the Foundation would achieve worthy results in any of these undertakings only by faithful and thorough work, and that it would be unwise to undertake one piece of work until another had been amply provided for.

THE EXECUTIVE COMMITTEE

THE executive committee has met four times during the fiscal year. The records of these meetings with detailed reports of the current finances were forwarded to the trustees after each meeting. The retiring allowances and pensions voted by the committee during the year are listed in full on later pages.

The action of the committee in respect to the questions of administration of retiring allowances referred to it by the trustees has been noted in the preceding summary. In accordance with the instructions of the trustees there recorded the committee approved the following addition to Rule 10 relating to the employment of beneficiaries:

“This rule does not prevent the retired professor from having access to the laboratories of his institution, or from accepting compensation for occasional lectures; but it does not permit him to assume stated academic duties.”

The committee also considered with care the whole question of the inclusion of the professors of the Conservatory of Music of Oberlin College within the benefits of the retiring allowance plan, and after full discussion the following resolution was adopted:

"Inasmuch as the term professor is far more widely applied in music than in other departments of university instruction, the executive committee deems it necessary to restrict the award of retiring allowances in the case of teachers of music to those who have shown distinct eminence in creative work or in theoretical knowledge."

The most important further business of the committee dealt with launching the study of engineering education, which is now well under way. For some time negotiations between the Foundation and the representatives of various engineering societies had been in progress. At a recent meeting at the offices of the Foundation, at which all the principal engineering societies were represented, it was agreed that this work was essentially a work of educational discrimination; that for it was needed, therefore, a man familiar with educational processes, and that probably some man in applied science rather than in active practice would be best suited for the task. The president recommended that Dr. C. R. Mann, Associate Professor of Physics at the University of Chicago, be associated temporarily with the Foundation in order to undertake this enquiry. It was accordingly voted that the president be authorized to make this arrangement.

The resignation of President James M. Taylor of Vassar College as trustee of the Foundation was presented as of date February 1, 1914.

ALLOWANCES GRANTED DURING THE YEAR

1. IN INSTITUTIONS ON THE ASSOCIATED LIST

RETIRING ALLOWANCES

<i>Institution</i>	<i>Name</i>	<i>Academic Title</i>	<i>Date Effective</i>
AMHERST COLLEGE.....	EDWIN A. GROSVENOR, LL.D.....	Professor of Modern Government and International Law	July 1, 1914
CORNELL UNIVERSITY.....	LIBERTY HYDE BAILEY, LL.D.*	Director of the College of Agriculture	Aug. 1, 1913
	JOHN HENRY COMSTOCK, B.S.	Professor of Entomology and General Invertebrate Zoölogy.....	June 17, 1914
	CHARLES DE GARMO, PH.D.....	Professor of the Science and Art of Education.....	Aug. 15, 1914
DALHOUSIE UNIVERSITY.....	RICHARD CHAPMAN WELDON, D.C.L., PH.D., K.C.	Dean of the Law School and Professor of Constitutional and International Law.....	July 1, 1914
HARVARD UNIVERSITY.....	GEORGE HERBERT PALMER, A.M., LITT.D., LL.D., L.H.D.	Alford Professor of Natural Religion, Moral Philosophy, and Civil Polity	Sept. 1, 1913
MASSACHUSETTS INSTITUTE OF TECHNOLOGY	HENRY K. BURRISON, B.S.....	Assistant Professor of Mechanical Drawing and Descriptive Geometry	July 1, 1914
	ROBERT HALLOWELL RICHARDS, LL.D.	Professor of Mining Engineering and Metallurgy.....	July 1, 1914
	SAMUEL HOMER WOODBRIDGE, A.M.	Associate Professor of Heating and Ventilation.....	Jan. 1, 1914
NEW YORK UNIVERSITY	FRANCIS HOVEY STODDARD, PH.D....	Professor of the English Language and Literature; Dean of the College of Arts and Pure Science..	Sept. 1, 1914
PRINCETON UNIVERSITY.....	ALEXANDER THOMAS ORMOND, PH.D.†	Professor of Philosophy	July 1, 1914
PURDUE UNIVERSITY.....	PAULINE MARIOTTE DAVIES, PH.D...	Professor of French.....	July 1, 1914
SWARTHMORE COLLEGE.....	GEORGE ARTHUR HOADLEY, SC.D....	Vice-President and Professor of Physics.....	July 1, 1914
UNIVERSITY OF CALIFORNIA.....	JOHN FRYER, LL.D.....	Agassiz Professor of Oriental Languages and Literature	July 1, 1914
UNIVERSITY OF MINNESOTA.....	CHARLES WILLIAM BENTON, LITT.D....	Professor of the French Language and Literature	Aug. 1, 1913
	JOHN F. DOWNEY, M.A., C.E.....	Professor of Mathematics; Dean of the College of Science, Literature, and Arts	Aug. 1, 1914
	JOHN G. MOORE, B.A.....	Professor of the German Language and Literature.....	Aug. 1, 1914
UNIVERSITY OF MISSOURI	IRVIN SWITZLER.....	Registrar.....	July 1, 1914
UNIVERSITY OF PENNSYLVANIA.....	CHARLES FRANCIS OSBORNE ‡.....	Professor of the History of Architecture.....	Granted Dec. 19, 1913
UNIVERSITY OF TORONTO.....	JAMES FREDERICK McCURDY, PH.D., LL.D.	Professor of Oriental Languages..	July 1, 1914
UNIVERSITY OF VERMONT	ARCHIBALD LAMONT DANIELS, SC.D.	Professor of Mathematics.....	Oct. 1, 1914
	NATHAN FREDERICK MERRILL, PH.D.	Pomeroy Professor of Chemistry.	Sept. 1, 1914
VASSAR COLLEGE.....	JAMES MONROE TAYLOR, D.D., LL.D....	President.....	Feb. 1, 1914
WABASH COLLEGE	ARTHUR BARTLETT MILFORD, L.H.D.	Professor of the English Language and Literature	Sept. 10, 1913
WASHINGTON AND JEFFERSON COLLEGE	DUNLOP JAMISON McADAM, LL.D. ...	Le Moyne Professor of Applied Mathematics.....	July 1, 1914
	JAMES DAVID MOFFAT, LL.D.†	President	
YALE UNIVERSITY.....	WILLIAM GILBERT MIXTER, M.A....	Professor of Chemistry.....	Sept. 1, 1913

* Allowance granted May 5, 1910, but not operative till August 1, 1913.

† Allowance granted but not yet operative.

‡ Died December 23, 1913.

WIDOWS' PENSIONS

<i>Institution</i>	<i>Name</i>	<i>Husband's Title</i>	<i>Date Effective</i>
COLUMBIA UNIVERSITY	MRS. JOHN GREEN CURTIS	Professor of Physiology.....	Oct. 21, 1913
DARTMOUTH COLLEGE.....	MRS. RUFUS BYAM RICHARDSON	Lecturer in Archaeology.....	Apr. 11, 1914
HARVARD UNIVERSITY.....	MRS. SILAS MARCUS MACVANE	McLean Professor of Ancient and Modern History.....	Feb. 20, 1914
	MRS. BENJAMIN OSGOOD PEIRCE....	Hollis Professor of Mathematics and of Natural Philosophy	Feb. 15, 1914
PRINCETON UNIVERSITY.....	MRS. CHARLES GREEN ROCKWOOD..	Professor of Mathematics	Jan. 1, 1914
TULANE UNIVERSITY	MRS. ALCÉE FORTIER	Professor of Romance Languages, and Dean of the Graduate Department.....	Feb. 15, 1914
UNIVERSITY OF MINNESOTA.....	MRS. CHARLES WILLIAM BENTON....	Professor of French	Dec. 12, 1913
	MRS. JOHN SINCLAIR CLARK	Professor of the Latin Language and Literature	Sept. 5, 1913
UNIVERSITY OF MISSOURI	MRS. MILLARD LEWIS LIPSCOMB....	Professor of Physics.....	May 9, 1914
UNIVERSITY OF PENNSYLVANIA	MRS. CHARLES FRANCIS OSBORNE...	Professor of the History of Architecture	Dec. 24, 1913
UNIVERSITY OF WISCONSIN	MRS. WILLIAM WILLARD DANIELLS	Emeritus Professor of Chemistry.	Nov. 13, 1912
WASHINGTON UNIVERSITY.....	MRS. CALVIN MILTON WOODWARD .	Professor of Mathematics and Applied Mechanics	Feb. 13, 1914

2. IN INSTITUTIONS NOT ON THE ASSOCIATED LIST

RETIRING ALLOWANCES

<i>Institution</i>	<i>Name</i>	<i>Academic Title</i>	<i>Date Effective</i>
CORNELL COLLEGE	JAMES ELLIOTT HARLAN, A.M., LL.D.	President	July 1, 1914
FISK UNIVERSITY	HERBERT HORNELL WRIGHT, LL.D.	Dean and Professor of Mathematics	Jan. 1, 1914
GOUCHER COLLEGE.....	JOHN B. VAN METER, LL.D	Morgan Professor of the English Bible and Philosophy	Sept. 1, 1914
UNIVERSITY OF KANSAS.....	FRANK OLIN MARVIN, A.M.....	Dean of the School of Engineering and Professor of Civil Engineering.....	July 1, 1914

WIDOWS' PENSIONS

<i>Institution</i>	<i>Name</i>	<i>Husband's Title</i>	<i>Date Effective</i>
BROWN UNIVERSITY	MRS. WILLIAM WHITMAN BAILEY ..	Professor of Botany	Mar. 21, 1914
OREGON AGRICULTURAL COLLEGE...	MRS. THOMAS MILTON GATCH.....	President	May 23, 1913
SOUTHERN EDUCATION BOARD.....	MRS. EDGAR GARDNER MURPHY....	Secretary	July 24, 1913

FINANCIAL DATA CONCERNING ALLOWANCES GRANTED DURING THE FISCAL YEAR

OCTOBER 1, 1913, TO SEPTEMBER 30, 1914

PARTICIPANTS	Number of Allowances Granted	Average Age at Date of Retirement	Average Length of Service	Number of Deaths during the Year	Average Amount of Allowance	TOTAL GRANT FOR THE YEAR
PROFESSORS AND OFFICERS IN INSTITUTIONS ON THE ACCEPTED LIST.....	25	65.7 ¹	33.0	9	\$2,074.60	\$49,790
PROFESSORS AND OFFICERS IN INSTITUTIONS NOT ON THE ACCEPTED LIST.....	4	66.8	33.5	3	\$1,607.50	\$6,430
WIDOWS OF PROFESSORS AND OFFICERS IN INSTITUTIONS ON THE ACCEPTED LIST...	12			3	\$1,015.00	\$12,180
WIDOWS OF PROFESSORS AND OFFICERS IN INSTITUTIONS NOT ON THE ACCEPTED LIST	3				\$833.33	\$2,500
TOTAL.....	44			15	GENERAL AVERAGE OF RETIRING ALLOWANCES \$1,648.84	\$70,900

¹ These averages include only such grants as became operative in 1913-14.

ALLOWANCES NOW IN FORCE

FINANCIAL SUMMARY ON SEPTEMBER 30, 1914

GRANTEES	Number of Allowances in Force				Average Age at Date of Retirement			Average Length of Service			Average Amount of Allowance			TOTAL GRANT IN FORCE SEPT. 30, 1914
	On basis of age	On basis of service	On basis of disability	Total	Retired on basis of age	On basis of service	On basis of disability	Retired on basis of age	On basis of service	On basis of disability	On basis of age	On basis of service	On basis of disability	
PROFESSORS AND OFFICERS IN ACCEPTED INSTITUTIONS...	181	64	14	259	68.8	63.4	57.6	32.4	34.0	29.2	\$1,856.35	\$1,901.50	\$1,396.43	\$486,775
PROFESSORS AND OFFICERS NOT IN ACCEPTED INSTITUTIONS	44	25	4	73	69.1	64.9	62.8	30.0	36.5	33.4	\$1,366.85	\$1,466.73	\$1,259.94	\$106,050
WIDOWS OF PROFESSORS AND OFFICERS IN ACCEPTED INSTITUTIONS				76							\$950.44			\$75,085
WIDOWS OF PROFESSORS AND OFFICERS NOT IN ACCEPTED INSTITUTIONS				24							\$810.83			\$19,460
TOTAL				432							GENERAL AVERAGE OF RETIRING ALLOWANCES \$1,594.83			\$687,370

TOTAL NUMBER OF ALLOWANCES GRANTED

YEAR	INSTITUTIONS	Age	Service	Permanent Disability	Temporary Grants	Widows	Total	Deduct For Deaths For Dis-continuances	Net Increase	Allowances & Pensions in Force at End of Year
1906 ¹	Accepted Institutions	21	18		7	5	51		51	
	Unaccepted Institutions	18	15		4	3	40	1	39	90
1906-7	Accepted Institutions	24	11		2	7	47	9	38	
	Unaccepted Institutions	8	16		3	1	28	8	20	58
1907-8	Accepted Institutions	18	18		4	9	49	8	40	
	Unaccepted Institutions	11	9		4	6	30	5	24	64
1908-9	Accepted Institutions	29	25		8	13	75	5	70	
	Unaccepted Institutions	18	15		4	3	40	2	37	107
1909-10	Accepted Institutions	26	7	2	4	7	46	11	24	
	Unaccepted Institutions	10		1	2	5	18	12	3	27
1910-11	Accepted Institutions	21		6	2	13	41	15	26	
	Unaccepted Institutions		1		1	4	6	2	1	27
1911-12	Accepted Institutions	29		3		11	43	11	30	
	Unaccepted Institutions	2				3	5	9	5 ¹	25
1912-13	Accepted Institutions	22				8	30	16	14	
	Unaccepted Institutions	2				1	3	12	9 ¹	5
1913-14	Accepted Institutions	20		4		12	36	11	25	
	Unaccepted Institutions	3		1		3	7	3	4	29
	Totals	282	138	17	45	114	595	140	23	432

¹July 1 to September 30. ²Decrease.

GEOGRAPHICAL DISTRIBUTION OF ALLOWANCES GRANTED

STATE, TERRITORY, OR PROVINCE	Number of Allowances granted			Deaths	Temporary Allowances Discon- tinued	Number of Allow- ances in Force
	In Institutions on the Associated List	In Institutions not on the Associated List	Total			
NORTH ATLANTIC DIVISION						
MAINE	8	3	11	2	1	8
NEW HAMPSHIRE	9		9	2	1	6
VERMONT	5		5			5
MASSACHUSETTS	77	4	81	15	3	63
RHODE ISLAND		2	2	1		1
CONNECTICUT	30	3	33	5		28
NEW YORK	77	9	86	20	4	62
NEW JERSEY	20		20	5		15
PENNSYLVANIA	29	9	38	10	1	27
Total	285					
SOUTH ATLANTIC DIVISION						
MARYLAND	6	1	7	1		6
DISTRICT OF COLUMBIA.....	2	5	7	2		5
VIRGINIA	9	11	20	9		11
WEST VIRGINIA		4	4	1		3
NORTH CAROLINA		7	7	3		4
SOUTH CAROLINA		7	7	3		4
GEORGIA		4	4	2		2
FLORIDA		3	3			3
Total	59					
SOUTH CENTRAL DIVISION						
KENTUCKY	4	4	8	2		6
TENNESSEE		8	8	3		5
ALABAMA		5	5	3		2
MISSISSIPPI		2	2			2
LOUISIANA	11		11	2	1	8
Total	34					
NORTH CENTRAL DIVISION						
OHIO	16	17	33	8	2	23
INDIANA	11	5	16	2		14
ILLINOIS	3	6	9	2	2	5
MICHIGAN	10	4	14	2		12
WISCONSIN	19		19	5		14
MINNESOTA	21	1	22	4		18
IOWA	7	14	21	4	4	13
MISSOURI	14	4	18	5		13
NORTH DAKOTA		3	3	2		1
NEBRASKA		1	1			1
KANSAS.....		4	4		1	3
Total	160					
WESTERN DIVISION						
MONTANA		2	2	1		1
COLORADO.....	2	5	7		2	5
CALIFORNIA	12	8	20	7	1	12
OREGON.....		4	4	1		3
Total	33					
THE DOMINION OF CANADA						
ONTARIO.....	3	1	4			4
QUEBEC	10		10	3		7
NOVA SCOTIA	3		3			3
NEW BRUNSWICK		3	3	1		2
PRINCE EDWARD ISLAND...		1	1			1
Total	21					
NEWFOUNDLAND						
		2	2	1		1
Total	2					
Grand Total	418	176	594	139	23	432

TOTAL EXPENDITURE IN ALLOWANCES

YEAR	INSTITUTIONS	Number of Institutions	Number of Teachers in Faculties	Number of Retired Teachers on Roll	Average Age at Retirement on Basis of Age	Amount of Retiring Allowances Paid	Number of Widows Pensioned	Amount of Widows' Pensions Paid	Total Load of Allowances and Pensions	Total Amount Paid
1906 ¹	Accepted	52	2,261	46	71	\$15,478.53	5	\$1,124.97	\$77,935	\$16,603.50
	Unaccepted	32		37	70	6,474.53	3	124.98	48,910	6,599.51
1906-7	Accepted	55	2,309	88	70	77,574.09	12	8,039.06	129,855	85,613.15
	Unaccepted	43		55	71.6	47,654.11	4	2,420.00	77,525	50,074.11
1907-8	Accepted	62	2,444 ²	124	70	146,140.47	19	14,989.48	203,290	161,129.95
	Unaccepted	59		66	70.5	80,134.26	10	5,378.20	100,215	85,512.46
1908-9	Accepted	67	2,986 ³	185	69.7	206,472.57	33	24,545.00	313,985	231,017.57
	Unaccepted	62		100	69.8	104,536.66	13	8,316.67	152,335	112,853.33
1909-10	Accepted	71	3,512 ²	138	69.6	291,403.98	40	33,795.04	382,120	325,199.02
	Unaccepted	77		92	70.6	132,497.51	17	12,137.77	138,950	144,635.28
1910-11	Accepted	72	5,025	215	69.5	341,899.16	52	46,720.17	425,105	388,619.33
	Unaccepted	77		85	70.1	122,215.10	21	16,044.57	128,560	138,259.67
1911-12	Accepted	72	5,066	236	69.3	388,338.27	61	53,646.37	478,440	441,984.64
	Unaccepted	68		79	69.7	108,329.55	22	20,045.84	125,415	128,438.39
1912-13	Accepted	73		244	69	416,626.37	67	62,360.77	501,415	478,987.14
	Unaccepted	63		72	69.2	102,814.10	21	18,588.77	115,055	121,402.87
1913-14	Accepted	73		268	68.7	444,966.52	79	69,523.06	547,335	514,489.58
	Unaccepted	66		76	69.1	99,984.68	24	20,389.51	119,660	120,374.19

¹ July 1 to September 30.

² Estimated.

TOTAL LOAD OF ALLOWANCES ASSUMED

YEAR	INSTITUTIONS	Age	Service	Perma- nent Dis- ability	Tempo- rary Grants	Widows	Total	Deduct		Net Increase	Annual Load at End of Year
								For Deaths	For Dis- continu- ances		
1906 ¹	Accepted	28,545	\$34,815		\$9,975	\$4,500	\$77,935			\$77,935	
	Unaccepted	22,380	20,145		5,600	2,170	50,245	\$1,335		48,910	\$126,845
1906-7	Accepted	36,750	24,435		2,540	6,165	69,890	17,970		\$51,920	
	Unaccepted	11,040	23,355		3,370	500	38,265	9,650		28,615	207,380
1907-8	Accepted	28,200	27,450		9,800	8,675	73,925	4,480	\$800	\$68,845	
	Unaccepted	14,785	14,975		6,000	4,080	39,840	11,800	960	27,080	303,305
1908-9	Accepted	47,855	46,490		12,485	11,700	118,530	7,685		\$110,845	
	Unaccepted	20,540	30,500		5,100	2,220	58,360	6,190	1,500	52,170	466,320
1909-10	Accepted	56,315	12,820	\$2,515	7,000	7,025	85,675	17,830	19,370	\$48,475	
	Unaccepted	16,970		720	2,400	5,060	25,150	14,975	3,900	6,275	521,070
1910-11	Accepted	40,515		8,380	1,800	12,250	62,945	26,815	2,360	\$33,770	
	Unaccepted		3,010		1,000	2,955	6,965	3,920	4,220	1,175 ²	553,565
1911-12	Accepted	58,185		4,875		10,705	73,285	16,930	3,000	\$53,335	
	Unaccepted	5,600				3,000	8,600	10,745	1,000	3,145 ²	603,855
1912-13	Accepted	43,575				6,810	50,385	27,130	280	\$22,975	
	Unaccepted	4,200				600	4,800	15,160		10,360 ²	616,470
1913-14	Accepted	49,790				12,180	61,970	16,050		\$45,920	
	Unaccepted	6,430				2,500	8,930	4,325		4,605	666,995

¹ July 1 to September 30.

² Decrease.

THE STUDY OF LEGAL EDUCATION

Our survey of legal education in the several states has manifested itself hitherto chiefly in the shape of interrogatories and of vexatious demands upon the time and patience of busy men. It is doubtful whether any body, in the guise of helping legal education, has ever caused so much trouble to teachers of law. It is pleasant to record both the uniform courtesy with which our representatives have been received, and our hope that another year will see this travail bringing forth results in the shape of completed or almost completed publication.

Professor Josef Redlich of the University of Vienna, who came to this country last autumn upon the invitation of the Foundation, visited ten representative law schools. On the basis of the personal impressions thus obtained, reinforced by reading and discussion, he has prepared a stimulating commentary upon our methods of law teaching, from the point of view of one who sees them sympathetically and understandingly, and yet with that detachment which is possible only to the representative of another race and an independent system of law. Unless the war should occasion delays which we do not at present foresee, Professor Redlich's monograph will be published at once, and will in a way clear the ground for our own discussion of methods of admission to the bar, the details of law schools, and other problems.

These problems group themselves, as indicated in the last Annual Report, under two main heads: First, what should be the requirements for admission to the bar? Second, what should be the character of the institutional training provided in law schools? As an unofficial body, devoted to the advancement of teaching, we are concerned with the first query only in so far as it is necessarily involved with the second. And under both lines of enquiry, in connection with the multitudinous questions that present themselves, the importance of the work we are trying to perform lies not so much in such answers as we ourselves are able to suggest, as it does in the clear raising of these questions, and in the accumulation of material thru which those responsible for the present condition of things—the law school authorities, the bar associations, the courts, and the legislatures—may see what this condition is, and be brought themselves to face the problem. It is by no means true that the conditions under which young men may be admitted to the bar provide grounds for discouragement, taking the country as a whole. A great improvement in this respect has been made during this generation, and is still in progress. But the reports which our field workers have submitted prove conclusively that in certain states it would be utterly impossible for a law school to do honest, high-grade work, and flourish. The evidence in support of this truth is now being compiled, and will be laid before that authority which is really ultimately responsible—the public at large—as soon as possible.

Meanwhile, a patient investigator has traversed the South and Far West, examining the schools with such care as he has been able to exercise. Altho everywhere received with courtesy, or with more than courtesy, he has often encountered the latent

suspicion that his main object was probably to ferret out some not very important instance of wrongdoing, either in the cause of virtue in the abstract, or in order to bolster up a preconceived theory; and he has had to spend a portion of his time trying to persuade his hosts that our purpose is to help and not to hurt. In order to enable him to cover the remaining portion of the country—roughly, the territory north of the Ohio and east of the Missouri rivers—with the same care, it is estimated that another academic year will be required. The material can hardly be made ready for publication much before the end of 1915.

The following statistical memoranda are interesting as showing the proportion of lawyers in our Union as compared to doctors and ministers.

COMPARATIVE FIGURES, 1880-1910, FOR CONTINENTAL UNITED STATES
(EXCLUDING ALASKA AND INSULAR POSSESSIONS)

	1880	1890	1900	1910
Physicians and surgeons ¹	85,671	104,805	132,002	157,966
Clergymen ²	64,698	88,203	111,638	133,988
Lawyers ³	64,137	89,630	114,460	122,149
Total	214,506	282,638	358,100	414,103
Total population	50,155,783	62,947,714	75,994,575	91,972,266

Members of the profession to each 100,000 population

Physicians and surgeons	171	167	173	172
Clergymen	129	140	147	145
Lawyers	128	142	151	133
Total	428	449	471	450

Actual increase in decade

Physicians and surgeons	19,134	27,197	25,964
Clergymen	23,505	23,435	22,350
Lawyers	25,493	24,830	7,689
Total	68,132	75,462	56,003
Population	12,791,931	13,046,861	15,977,691

Per cent increase in decade

Physicians and surgeons	22.3%	25.9%	19.6%
Clergymen	36.3%	26.5%	20.0%
Lawyers	39.7%	27.7%	6.7%
Three professions together	31.7%	26.6%	15.6%
Population	24.9%	20.7%	21%

In other words, while the number of physicians and surgeons, in proportion to the population, has remained virtually uniform for thirty years, varying only between 167 and 173 to each 100,000 of population; and while during the last twenty years,

¹Including "healers," 6834 in 1910.

²Including "religious and charity workers," 15,970 in 1910.

³Including "judges, justices, and magistrates," 6816 in 1910, and "abstractors, notaries, and justices of the peace," 7445 in 1910.

or since the rise of a large class of charity workers, the number of ministers has also shown small variations; on the other hand, the number of lawyers, increasing much more rapidly than the population between 1880 and 1890 (forty per cent as against twenty-five per cent), and somewhat more rapidly between 1890 and 1900 (twenty-eight per cent as against twenty-one per cent), increased during the last decade only one-third as fast (seven per cent increase in the number of lawyers, as against twenty-one per cent for the entire population). This comparatively greater stability on the part of physicians and clergymen is doubtless to be accounted for by the fact that young men rarely enter either of these professions without a strong sense of "vocation." Their number, therefore, is less dependent upon changes in standards, or upon economic factors, than in the case of lawyers.

THE STUDY OF ENGINEERING EDUCATION

THE enquiry into Engineering Education, which has been begun this year, is designed to extend the investigations of the Carnegie Foundation to another branch of higher professional education. Because engineering is relatively a new profession, its professional consciousness is not as well developed as that in medicine and law,—as is evidenced by the fact that engineering societies are of comparatively recent date. Thus the American Society of Civil Engineers, organized in 1852, held its first convention in 1869. The similar organizations of the mechanical and the electrical engineers were formed in 1880 and 1884 respectively.

Because of this newness of the demand for engineers, the engineering schools of this country have had to do much pioneer work in education. Founded, as most of them were, since 1860, in response to the needs of our growing industries for men trained in applied science, they have had to blaze their own trail thru the forests of educational tradition; and, particularly in the early years of their existence, have had to defend their practices against existing habits of educational procedure. This fact makes the study of engineering education one of particular interest and importance, since it inevitably led to modifications in school practices both in the engineering colleges themselves and in the colleges for liberal humanistic training.

Altho engineering was a much simpler thing at the time when the engineering colleges were established than it is at the present time, the founders of these institutions recognized clearly the novelty of the demands they were trying to meet, and organized their schools with a definite purpose of meeting those demands as fully as possible. The curricula of the early schools were devised only after a careful study of the conditions which the young engineer would have to meet on emerging from his course. That these curricula and the methods of training used were well adapted to the purposes for which they were devised is shown by the admirable results obtained. The wonderful development of the country in industrial and technical lines is in no small measure the work of the graduates of the engineering colleges, and stands as

a monument to the far-sightedness, the sound instincts, and the high ideals of the men who guided the work.

But this rapid expansion in industrial and technical lines, aided at every turn by the equally rapid development of science, has resulted in making the field of engineering very broad and extremely complicated. Engineers have been forced to specialize in limited fields, and each year has witnessed a higher degree of specialization and an increase in the amount of subject-matter which must be included in the curricula of the schools. To meet this situation, the engineering schools have gradually patched the original curriculum by adding new subjects here and there and subdividing their instruction into an ever increasing number of more highly specialized courses. The demands on the student's time have become severe, and the ingenuity of faculties to frame time-schedules which shall satisfy the requirements of all the various departments is being taxed to the utmost.

That there is a pressing need for a full and thorough study of engineering education is clearly recognized by the engineering profession. This recognition has manifested itself in the organization, in 1893, of the Society for the Promotion of Engineering Education, and in the increasing attention which the engineering societies and the engineering press have given to this subject. It has recently been clearly expressed by the appointment of a joint committee on Engineering Education, whose membership is made up of fifteen representatives of the leading national engineering societies, and whose function is "to examine into all branches of engineering and to formulate a report on the appropriate scope of engineering education."

The Carnegie Foundation is undertaking this study of engineering education in close conference and hearty coöperation with this committee. An important part of this enquiry will consist in a study of the conditions into which a young engineer enters immediately on graduation, and of the estimates which the engineering profession has formed of his needs and his equipment. Another part of the enquiry will consist of a study of the aims, the purposes, the curricula, the methods of teaching, and the educational experiments and investigations of the engineering schools. Such material, arranged in compact form, should be of value to schools and teachers, no less than to engineers and students.

THE TRAINING OF TEACHERS

For several years the Foundation has considered the desirability of conducting a systematic enquiry into the present status of the training of teachers for elementary, secondary, and vocational schools. This problem, of vastly greater import to the country at large than any other existing phase of instruction, has presented a continuous challenge, and as a whole has defied manageable analysis.

The training of teachers in some form constitutes the capital factor in the success of what is financially and socially the major undertaking of every community. It is

a problem of enormous bulk. At the same time it differs from the same problem in such professional fields as law, medicine, and engineering in that among elementary and secondary school teachers professional consciousness is nearly lacking. No organized group of teachers speaks, plans, or labors authoritatively for the profession as a whole. Such state or national associations as exist are huge, vaguely constituted aggregates, wholly lacking in definition of aim and membership. Under such conditions the real problems of the teacher cannot focus sharply and be clearly understood by the teachers themselves in their collective capacity.

This lack of professional consciousness is due undoubtedly to the meagre training usually required, as well as to the casual and temporary nature of the employment under the conditions prevailing in America. All of these elements unite to place the teacher in marked dependence upon local provision and circumstance; individual initiative is discounted, and reliance is placed upon a more or less readily regulated "supply" of passive-minded instructors.

It is this localized character of the task of preparing teachers that has finally determined the form of the contribution which the Foundation hopes to make to this subject. Little by little the states of the nation are realizing the oneness of the educational undertaking which faces them, and are discovering that they can expect to cope successfully with it only by creating a skilful and mobile central authority to operate and control the entire undertaking. Of this great single educational enterprise in each state, the portion that is most vital, that overtops all else in its decisive importance, is that of selecting and training teachers. The solution of the state's problem as a whole is measured largely by the solution of this portion of the problem. It is emphatically a state task to-day, and will doubtless permanently remain so.

It would seem most helpful, therefore, for the Foundation to approach the question from a standpoint as nearly as possible identical with that of the state itself. If it can succeed in a few states, or in one state, in appreciably illuminating the situation in its legislative, administrative, and institutional aspects, the results should prove of value not only for the particular state concerned, but by analogy for all states possessing similar conditions.

This it hopes to do. The governors and the departments of public instruction of two typical states of the middle west, Indiana and Missouri, have invited the Foundation to examine the situation that exists with regard to the training and supply of teachers in their respective commonwealths. To these formal invitations have been added many requests and pledges of coöperation on the part of local authorities in schools, colleges, and universities. With the assistance of the institutions and officials involved, and of the teachers themselves, it is believed that facts of great importance can be brought together and certain questions answered that are fundamental to the successful administration of the states' school system: What is the source, nature, and extent of the general and professional training of the teachers to-day employed? What are the circumstances of age, sex, experience, and reward? What are the facts in

respect to the annual supply required in the various grades of position? What is the degree of adjustment between training and service? How do present institutional agencies meet the apparent demand of the state in point of character of material, of quality of training, and quantity of product? What, finally, is the legislative and administrative background that conditions the state's present management of its problem? In all the above particulars, what is the historical perspective, and what is the strength of present tendencies?

From such a review and comparison of conditions there can scarcely fail to emerge numerous points at which the present procedure can be improved and strengthened. The opportunity also of making a precisely parallel study of two fairly similar state units should make the results especially helpful.

PENSIONS

THERE is every indication that the pension idea is being gradually extended and coming to be regarded as a definite incidence of employment. This is true not only of public but of private services. The latter, almost without exception, have adopted the non-contributory principle of pensioning employees; the reasons for this have been stated in a previous report. The former, on the other hand, are to an increasing extent establishing pension systems on the contributory principle, both the employers and employees sharing the cost of the future pensions. As is carefully pointed out in the Report of the Massachusetts Commission on Pensions, which was issued in 1914, the non-contributory system is undesirable and inadvisable for public employees, at any rate, because: "(1) It is a heavy, continuing and increasing tax. (2) It makes for inefficiency in the public service by making difficult the dismissal of incompetent employees. (3) It is disadvantageous to the employees because it influences adversely the wage of the employees. (4) It encourages a demand for non-contributory pensions for all aged persons." The justification of pensions to public employees is gradually being shifted. Pensions are no longer regarded as so much deferred pay, but as necessary measures for securing efficiency by enabling the employer to remove the superannuated and inefficient. The assessments on employees again are justified on the ground that they may be exacted as compulsory savings. Public policy, therefore, as much as the welfare of the individual, makes pensions desirable. The fundamental requirements of a good pension scheme are well summarized by the Massachusetts Commission under four heads—compulsory saving, compulsory application, inclusiveness, and centralized administration. Since the state, thru compulsory saving, "obviates the difficulty and hardship of retiring the superannuated without provision for dependent old age, it receives benefit by way of increased efficiency, and should assume part of the cost of a retirement system." Since voluntary plans have hitherto proved ineffectual, compulsory application is an essential principle and must be accompanied by the inclusion of all employees. Centralized administration is necessary

“for reasons of economy as well as for statistical information, correlated study, and estimate of cost.”

A careful study of recent pension development leads inevitably to the conclusion that the establishment of pension systems is not yet receiving the necessary care and study that are absolutely essential to secure solvency. Sometimes such systems are hastily put on the statute-books to secure an early measure of relief for some worthy superannuated employees, or to enable the employer to get rid of the incapable superannuated servants without imposing too much hardship. In other cases systems are started with a small fund in the hope that somehow or other it may be increased. And it is probable, too, unless a halt is called, that considerable damage will be done within the next few years if the pension idea assumes the dimensions of a fashion. For imitation without intelligent appreciation of local needs has often been a cause of disaster. The rapid development of recent years has been accompanied by an utter/disregard of the simple mathematical principles involved. Pension systems have now been established long enough in this country to offer some very salutary lessons. The last few years have seen the collapse, or imminent collapse, of pension systems of comparatively recent date. A number of recent investigations afford sufficient evidence to prove that many of the mistakes could have been avoided by the simple expedient of securing actuarial advice before the launching of any system.

It is quite clear that many of the so-called pension schemes would be more successful if they were frankly “Relief Funds” which assured a certain relief in the way of pensions, not upon fixed rules but upon the judgment of a board whose responsibility did not exceed the income of this fund. Thus, for example, a small college which has a modest endowment for pensions could with it maintain a relief fund which would retire upon reasonable pensions those actually in need of retirement and perhaps care for widows in need, when such a fund would be inadequate to support a fixed pension scheme unless the pensions were upon a scale so modest as to afford but scanty relief. A relief fund thus administered by a board in which teachers were represented could, by the exercise of discretion, relieve the practical needs of the situation without assuming impossible burdens. Many of the state pensions are really nothing more than relief funds with limited resources, operated under a misleading theory.

In the absence of complete actuarial investigation those starting pension funds are often misled by overlooking the difference between a government pension fund and that of a private company. In government pension systems the unlimited resources of the government come to the relief of the pension system, not only to tide it over the difficulties which arise from irregular demands, but also to take care of any discrepancy between the actuarial computation and the actual experience. The Carnegie Corporation can, if it deems wise, supplement from time to time the endowment of the Carnegie Foundation pension fund. In the absence of some such reservoir it is almost impossible to pledge any agency to a fixed system of pensions unless that system rests partly upon individual contributions and each individual account stands

upon its own basis, so that in the case of withdrawal, of disability, or of death, the sum paid by the pension agency has a secure relation to the sum paid in by the beneficiary.

In emphasizing the need of thorough actuarial guidance it is, however, still necessary to remember that the best actuarial advice is subject to wide limits of variation. In addition, the actuarial computations require a considerable length of time to give the law of probabilities a chance to act. Computations, which in the course of a generation may work out all right, may show enormous variations one way or the other during the interval. Thus vital statistics may show great variations in particular years. For example, during the short experience of the Carnegie Foundation the actual mortality has fallen far below the expectation of the tables. Whether this means a fundamental difference in the death rate of retired teachers can be learned only by a much longer experience, but in the long run it may be assumed that the vital statistics of retired teachers will not differ appreciably from those of similar classes of citizens. Any system of pensions on fixed rules must expect at times unusual demands.

Many pension plans court disaster at the outset by neglecting to provide for the payment of accrued liabilities, or the payment of pension claims to those already in the service who will retire after few or no contributions. Even where this problem is recognized and the beneficiary must pay a certain sum into the pension fund before becoming eligible for the retirement allowance, the amount of this sum is arbitrary and bears no relation whatever to the sum to be paid out as pension. The most frequent result is that such payments are made out of current funds; in other words, the contributions of those still in service or of future entrants are employed to pay the pensions of those on the retired list instead of being used to build up a fund to meet the future claims of the contributors. Once a pension system gets into difficulties, the troubles come thick and fast, and no efforts but complete reconstruction can stem bankruptcy. This consideration leads to another fundamental need in any pension scheme. However soundly conceived a pension system may be, especially if connected with an expanding service, it is always exposed to unforeseen risks. If actuarial advice is essential on the establishment of a pension scheme, the provision of periodical investigation is as important. This is by no means a novel principle. Quinquennial returns were required by law from the English friendly societies thru the greater part of the last century. The English Elementary School Teachers (Superannuation) Act, 1898, requires an actuarial enquiry every seven years to be laid before Parliament and to be used for revising the scales of contributions and annuity tables, in order to ensure the solvency of the fund. Section 5 of the Assurance Companies Act (1909) requires that every assurance company in Great Britain shall, once in every five years, or at such shorter intervals as may be prescribed by the company's regulations, cause an investigation to be made into its financial condition by an actuary. As a result of this legislation investigation has revealed, for example, that the United Kingdom Postal Telegraph and General Civil Service Benevolent Society, which was established

in 1885 and has a membership of 40,000, had a deficiency of \$4,416,460 on December 31, 1912, a deficit which was the result of unsound methods adopted at the establishment of the society. The defence on behalf of the society, that the deficit is purely actuarial and based on the assumption that all the members would die at the same time, indicates an attitude toward the whole question of pensions and benefits which is all too common. New York State, by Chapter 33, Laws of 1909, subjects all companies, corporations, and associations under the control of the superintendent of insurance to visitation and examination by him, or by such persons as he may designate. There seems to be no valid reason why pension and retirement fund associations should not be made subject to laws of a similar character. A periodical investigation would afford more security than an investigation when bankruptcy is imminent.

¶ The only safeguard that appears to occur to many of those who are concerned in drawing up pension plans is to reserve the right to prorate payments, should the funds be inadequate at any time to meet the claims. Such a measure, however, affords no protection to the members of the fund. Here again the question resolves itself into the matter that has already been discussed, the need of adequate preliminary investigation. At present there does not seem to be any relation between the amount of contributions from employees and the amount of the pensions, nor between the sources of the pension fund and the pension; gifts, bequests, fines, and other forfeitures, deductions for absences, fees from licenses and other sources form too unreliable a factor to be made the basis of a pension scheme. Apparently no care is taken to adjust the funds actuarially to the future pension payments.

¶ Another question that affects the administration of pension systems and indirectly, too, the funds, is the whole matter of disability. Few schemes attempt to define disability, or to protect the funds against abuses from this cause. In many instances the member of a pension fund may be retired for disability on the unsupported testimony of his private medical adviser. Not only should applications for retirement on this ground be accompanied by the reports of the public medical officers, but provision for periodical medical reexamination should be made. Nowhere is there any prohibition against accepting remunerative employment while enjoying a retiring allowance whether on account of age or disability. Too frequently pensioned employees have earned more salary after retirement than before. Pensions should be used for their legitimate purpose, the protection of old age or infirmity. Abuses are apt to creep in when they are granted on service rather than age bases, or when disability or incapacity is not well defined. The case of those who are pensioned on age and are permitted to follow other callings which are not detrimental to the former employer's interests is on a different footing, and is entirely justifiable.

Sufficient evidence is accumulating to indicate that insolvency is in all cases due to absence of preliminary actuarial calculation. It is unnecessary to enter into many details. The case of New York City pensions is dealt with in full below. But the

story is everywhere the same. The teachers' retirement fund introduced in Indianapolis in 1907 is already in difficulties, largely because of the drain caused by the accrued liabilities. The Board of Trustees of the Cincinnati School Teachers' Pension Fund, owing to the failure of one source of income, has been compelled to prorate the pensions, and is now paying only eighty per cent of the pensions provided by law. The Maryland Teachers' Pension Fund, which is of a philanthropic character, is already paying out the annual appropriation of \$28,000, and will consequently be unable to pension any more teachers unless the appropriation be increased or the pensions reduced. The pension funds for policemen and for firemen in Pittsburgh, Syracuse, Philadelphia, Boston, Chicago, Denver, and Dayton are insolvent actuarially, while those of Milwaukee are approaching that state. The Boston Permanent School Pension Fund, according to the Report of the Massachusetts Commission on Pensions, has at present invested funds of \$188,662.50, cash to the amount of \$5131.60, and the present value of the five cent tax on assessed valuation, \$968,479—a total of \$1,162,273 to pay \$559,769 for accrued liabilities, \$140,632 for special pensions under the act, and the present value of prospective pensions to members of the present active force, \$4,189,967. There is accordingly a deficiency of \$3,728,094.90; the normal load, \$437,700, or about 12.11 per cent of the pay roll, would be reached about 1973, providing there is no change in salary or great increase in the service. The Boston Teachers' Retirement Fund, known as the \$180 Fund, also shows a deficit of \$1,312,687.34.

The publication of facts such as these together with the careful but simple discussion of the actuarial principles involved should afford the surest guidance for the future. The Report of the Massachusetts Commission, accordingly, deserves the widest publicity among all who are interested in pensions. The Commission of Three, consisting of James E. McConnell as chairman, Magnus W. Alexander, and Henry S. Dennison, was appointed in 1913 by Governor Foss pursuant to the directions of the legislature. The object of the commission was to:

(a) Report fully and in detail the various systems under which pensions are now paid by the Commonwealth and by the counties, cities, and towns therein, and to what persons pensions are now being paid thereunder and the amounts thereof.

(b) Also consider the case of persons now receiving pensions who are engaged in other employment.

(c) Report upon the advisability of a service-pension plan under which the persons to whom pensions are granted shall make payments from their salaries or wages, or shall consent to deductions therefrom as contributions to the fund from which pensions are to be paid, or any other plan which the commission may approve.

(d) Also report upon the advisability of a general pension system for old age or other disability.

(e) And include in its report a general bill or bills regulating the pensions to be paid by the Commonwealth and by the counties, cities, and towns therein.

The report, which was issued on March 16, 1914, includes statistical investigations of pensions in the Commonwealth, special investigations conducted by Mr. Herbert D. Brown of certain pension laws as to their financial soundness and probable future cost, a description of pension systems in the Commonwealth and a valuable synopsis of the chief pension systems for public employees in the United States, a concise and thorough consideration of the principles underlying pensions for public employees, and the submission of four proposed pension acts. The conclusions and principles reached by the commission may well be shown by a brief résumé of the pension bill which it proposed under the title "Massachusetts Retirement Act. An Act to establish a Retirement System for Employees in the Public Service." The act was to apply to every town with 10,000 inhabitants, and to towns with less than 10,000 inhabitants in the case of teachers, and in these towns generally if a majority vote decided in favor. All public employees except Justices of the Supreme Judicial Court, elective officers, employees for a term of years, and war veterans, were to be included under the act. The system was to be compulsory, and existing employees could join within sixty days, or leave the service within ninety days if they decided in the negative. The management of the fund was to be in the hands of a retirement commissioner, appointed by the governor with the advice and consent of the council. Compulsory assessments were to be made of five per cent on salary for twenty-five years, but no sums over \$2000 a year were to be considered. The assessments were to be deposited in the retirement fund and credited to the individual accounts of the employees. The expense fund was to be raised by special appropriation. The pension fund which was to supplement the annuities earned by the employees' contributions was to be met by an annual appropriation of "such an amount, as estimated by the retirement commissioner, that with regular interest will equal the estimated amount of the employees' contributions with regular interest at the completion of the twenty-five years." Such appropriations, however, were to commence only with the beginning of the completed tenth year of service of each employee. Employees were to become eligible for retirement at sixty-five, except that policemen and firemen were to retire at sixty. If consonant with the interests of the public service, an extension could be allowed from year to year, but not for more than five years. Upon retirement the employee was to receive from the annuity fund "such an annuity as the sum of his contributions with regular interest, together with the amount with regular interest appropriated on his account by the employer." In the case of disability certified by a physician designated by the employer, the employee would have been entitled to the amount of his contributions and the amounts already appropriated by the employer on his account, both with regular interest. In the case of death before ten years' service, all the contributions plus regular interest were to be paid to his legal representative; in the case of death after ten years' service, all the contributions with regular interest and half the sum appropriated by the employer were to be returned to the legal representative; in the case of withdrawal, an employee was to receive all the contributions with regular interest, or after

ten years' service was to be permitted to leave the contributions until the retiring age and receive this sum and the amount appropriated on his account, both with regular interest. Provision was made in the act for an actuarial examination of the annuity fund at least once in five years.

This plan is based on the same principles as the Massachusetts Teachers' Retirement Bill referred to in the last Annual Report. It is interesting to note that the scheme does not differ greatly in theory from that of the Federated Universities Superannuation Scheme in England, or the scheme proposed for English secondary school teachers. It is based on the principle that the contributions of each member of the fund continue to belong to him and must be used to build up a fund to pay his annuity; they are not to be thrown into the general fund to pay current claims. Accordingly the contributions are employed to accumulate a fund out of which an annuity is to be paid. The pension proper is paid by the employer, and is equal in amount to the annuity obtained by the contributors. No elements of uncertainty enter into such a scheme; the sources of income are clearly defined; the limits of the appropriations that will be required can be estimated because the amount of salary assessable is limited to \$2000, and it may fairly be assumed that where the number of employees in a public service increases, the taxable power of the employer probably increases at the same time. Under this scheme the funds and the future pension payments are actuarially adjusted. Since the contributions continue to belong to the contributor, adequate provision can be made for the payment of disability allowances, death benefits, and refunds.

It is unfortunate that the bill met with defeat in the legislature on June 23, 1914, in spite of the strong plea that the measure would produce order out of a chaos which has been permitted to grow up unchecked by the granting of local pension acts. A hundred or more pension bills are presented annually to the legislature. All these would have been swept aside in favor of a uniform centrally controlled system. No opposition appears to have been raised to the principles on which the bill rested, altho it was considered that the five per cent assessment was too high. It is to be hoped that the measure will not be dropped entirely; much can be done by securing wider publicity. But whatever comes of the measure, the commission has done a great service in presenting a well-considered report, which deals not only with the principles, but illustrates the pitfalls to which pension schemes are liable, and presents in a clear summary a survey of the pensions current in this country. A similar study for New York City, which is now under way, should go far to afford authoritative guidance for the future.

Colleges having small endowments can in some instances establish what might be called "pension and relief funds," which, while relieving the general demands of a pension system, do not commit the fund to any greater expenditure than its income. Thus a small college with a faculty of twenty may out of an endowment of \$100,000 or \$150,000 administer a relief fund which will care for most cases of actual need either on the part of professors or their wives. The administration of such a fund,

however, calls for great judgment and tact, and for an unselfish coöperation on the part of those who expect to benefit from the fund. Colleges that are contemplating such a step as a permanent pension system may well consider this alternative.

PENSIONS FOR PUBLIC SCHOOL TEACHERS

STATE SYSTEMS

THE past two years have witnessed a great increase in the establishment of state pension systems for public school teachers. While in the Seventh Annual Report only six state-wide systems were noted, the number has now risen to thirteen. The states that have a state-wide provision for pensioning the teachers in their service are Arizona, California, Maine, Maryland, Massachusetts, New Jersey, New York, North Dakota, Rhode Island, Utah, Vermont, Virginia, and Wisconsin. While the greater spread of the pension idea can be viewed only with satisfaction, this is accompanied by a feeling of disappointment that more care is not taken to ensure the permanency of these schemes by deeper consideration of the fundamental principles involved. Each state conceives its scheme in its own way. With one exception, that of Massachusetts, there is no evidence that any serious attempts have been made to look ahead and to secure the future by employing a scientific and sound basis at present. A few of the systems are non-contributory, a feature accompanied by a low rate of pension; others furnish state support that appears to have been arbitrarily calculated. Nowhere, again excluding Massachusetts, is there any recognizable relation between the number and amount of the contributions and the size of the pensions. Taken as a whole, the systems show no uniformity. The schemes appear to have been adopted largely on sentimental grounds in response to the appeals of the teachers.

Four states, Arizona, Maine, Maryland, and Rhode Island, have adopted non-contributory systems and find the entire amount required to meet the pension claims annually. New Jersey, North Dakota, and Utah make no contribution from the state funds towards pension payments. The remaining states make annual appropriations of varying amounts from public funds for similar purposes. Thus California furnishes five per cent of the tax on inheritance and transfers of property; Maine appropriates \$25,000 annually, Maryland a maximum of \$28,000, Virginia \$5000, and Wisconsin ten cents for each child of school age. Massachusetts makes two appropriations—one for the expense fund, and another for the pension fund, a sum which varies from year to year. In six cases the management of the funds is in the hands of the state board of education; in the remaining states they are controlled by special boards of trustees or teachers' retirement boards, in all of which the teachers or members of the fund are well represented. The greatest variation is found in the amounts of the contributions paid by the teachers. New Jersey, North Dakota, and Wisconsin have a scale of contributions graded according to years of service, but in

each case a maximum is fixed; New York, Utah, and Virginia deduct one per cent of the teachers' salaries; the teachers of California pay \$1 monthly, while in Vermont the amount of the contributions is fixed by the local authorities. Under the Massachusetts scheme teachers pay an amount determined annually, but never less than \$35 nor more than \$100. The size of the pensions varies again from \$200 a year in Maryland to about \$1000 at the age of sixty in Massachusetts (including both the annuity purchased by the teachers' contributions and the state pension allowance). Four states, Arizona, New Jersey, New York, and Utah, provide for a maximum of \$600 per annum; four, California, Rhode Island, Vermont, and Virginia, for a maximum of \$500 per annum; in the other states the maximum is in Maryland \$200, in Maine \$250, in North Dakota \$750, and in Wisconsin \$450. In five states the amount of the pension bears a certain proportion to the average salary received by the teacher in the last five years of service. Massachusetts alone provides a retiring allowance that is definitely ascertained by actuarial methods; annuities are purchased with the contributions paid by the teachers, and pensions of an equivalent amount are appropriated from state funds. There can be no doubt but that this is the only sound method of procedure; whatever appropriation the state makes from public funds should be supplementary to the annuity earned by the teacher's contribution. Any other method of fixing the amount of the retiring allowance must be arbitrary. The only safeguard that is necessary under the Massachusetts plan is to make sure that the contributions from the teachers are sufficiently high to purchase annuities which with the state appropriation will enable the retiring teachers to live somewhat on the scale to which they have been accustomed. Only to this extent need the final salary be taken into consideration. The Massachusetts plan has the further important advantage that the annuity of each teacher is secured to him by his own contribution; under those schemes which pay a fixed amount out of a general fund the current contributions are too often employed to pay present claims instead of being set aside to build up the fund for future payments. It is significant that Massachusetts is the only state that refunds the full amount of the contributions with interest in the case of resignation or death, since the contributions of each teacher continue to belong to that teacher, while under any other system the contributions become part of the general fund. The usual practice is to return half of the contributions in the case of resignation, and the whole amount in the event of dismissal or death. Another feature which presents an absence of uniformity is the number of years of service required to obtain the maximum retiring allowance. The number varies from twenty-five years to forty years; six states, Arizona, Maryland (which also adds an age requirement), New York, North Dakota, Vermont, and Wisconsin, require twenty-five years' service; three states, California, Utah, and Virginia, thirty years; Maine, New Jersey, and Rhode Island, thirty-five years; and Massachusetts permits voluntary retirement at sixty years of age, altho it does not demand more than thirty annual contributions. In the majority of states provision is made for the retirement of teachers for disability on pen-

sions proportionate to their years of service, a minimum number of years of service usually being required.

The states which have adopted pension plans within the past two years are Arizona (1912), California (1913), Maine (1913), Maryland (1912), Massachusetts (1913), North Dakota (1913), Utah (1913), Vermont (1913). Of these the pension scheme of Massachusetts was described in the Eighth Annual Report; it came into force on July 1, 1914.

The system established in Arizona is non-contributory, and is maintained entirely by the state. Under its provisions the State Board of Education may retire teachers after twenty-five years' service on life pensions of \$600 per annum, which are paid by the state treasurer out of the state school fund.

The California system went into effect in August, 1913. The public school teachers' permanent fund, which was established under the act, consists of contributions from the teachers of \$12 a year, payable for thirty years, five per cent of the proceeds from the inheritance and transfer tax, donations and gifts, and state appropriations of amounts necessary to carry out the purposes of the law. The State Board of Education acts as the public school teachers' retirement board. Annual retirement allowances of \$500 a year are to be paid to teachers who have taught for thirty years, of which fifteen, including the last ten years before retirement, have been in the service of the public schools of the state. Proportionate allowances are paid in the case of disability after fifteen years of service. Membership in the fund was optional for teachers already in the service until January 1, 1914, but became compulsory on new teachers as soon as the act came into effect. Altho the scheme is not framed on any sound actuarial principles, it is probable that it may prove financially stable for some time, more particularly as state aid is to be forthcoming to meet the claims. The amount transferred on July 1, 1914, from the proceeds of the inheritance and transfer tax was \$89,774.64. The total pension claims paid in the three and a half quarters since the effective date of the law amounted to \$36,104.69; it is estimated that for the current fiscal year the sum of \$75,606.78 will be required to pay the claims of annuitants now on the list, with a possible addition of \$15,000 to meet new claims. About 13,000 teachers are paying the contributions required by the law, yielding \$156,000 annually. To this must be added the deductions from the pensions to make up the total contribution of \$360, which may be regarded as an attempt to cover the accrued liabilities. The fund, accordingly, expects an annual income of more than \$200,000, while the pension claims are expected to amount to \$125,000 or \$150,000 a year. These assumptions, however, do not appear to have been based on actuarial investigation. With more than 13,000 in a service which is rapidly expanding, it may safely be anticipated that more than 3000 teachers will survive when the fund assumes its load. It should be noted that the system makes no provision for the return of contributions on the termination of a teacher's service before becoming eligible to a pension.

Maine, like Arizona, has joined the small group of states which grant straight pensions. Three classes of pensions are paid: (a) \$250 a year to teachers who have reached the age of sixty and who have taught for thirty-five years, of which twenty, including the last fifteen, have been in the public schools of the state; (b) \$200 a year to teachers who have served for thirty years; and (c) \$150 a year to teachers who have served for twenty-five years. It is also provided that pensions of half these amounts be paid to teachers who retired before the act came into effect. (The payment of the pensions is made contingent on the possession of a state teacher's certificate by the claimant.) The claims are to be met by an annual state appropriation of \$25,000 after 1913, for which year only \$8000 was thought to be necessary. A permanent pension fund is not contemplated, nor are provisions made to increase the appropriation to meet the growing claims or to prorate the amounts due in such circumstances.

Maryland in 1912 revised her pension law, introduced four years earlier, to the extent of increasing the annual appropriation from \$25,000 to \$28,000. Pensions of \$200 a year are granted to teachers who are sixty years of age, have taught for twenty-five years, and are without the means of comfortable support; the age limit may, under certain conditions, be waived. The number of pensioners has already reached its maximum, if the amount of the pension and the appropriation are to remain at their present figures.

The pension system established in North Dakota came into force on January 1, 1914. The act provides for the appointment of a board of trustees of five members, three of whom are to be teachers. The contributions are graduated according to years of service. During the first ten years a deduction of one per cent is made from the salary, but not more than \$20 a year; during the subsequent fifteen years the contributions are two per cent of the salary, but not more than \$40 a year. To be eligible to a pension, teachers must have contributed a sum not less in amount than the first annuity paid. Membership is optional with old teachers but compulsory with new entrants since the date of the effective operation of the act. In addition to the teachers' contributions the pension fund is supplemented by a grant of ten cents for each child of school age in each county of the state. The pension becomes due after twenty-five years of service, of which eighteen, including the last fifteen, must have been in the public schools of the state. The amount of the pension is calculated on the basis of one-fiftieth of the average annual salary for the last five years of service multiplied by the number of years of service. No pension is to be less than \$350 nor more than \$750 a year. Disability allowances may be paid after fifteen years of service. In the case of withdrawals, half of the contributions are refunded without interest. While it is hoped that the pensions can be paid out of the income of the fund, the principal may be drawn upon if necessary—a wise provision when the fund bears no obvious relation to the claims that will fall due.

Utah has, by an extension of the legislation of 1907, adopted a two-fold system to

cover teachers in cities of the first class and teachers in the state at large. The system is to be established on petition of a majority of the teachers. The systems of first-class cities are to be administered independently. Teachers are to be well represented on the teachers' retirement commissions. The contributions, funds, and pensions are based on the same principles for both cities and the state at large. Two funds are to be established, (a) the permanent fund made up of contributions from teachers of one per cent of annual salary with an annual maximum of \$12, and deductions for absences, and (b) a current fund consisting of moneys derived from donations, gifts, and bequests not otherwise disposed of. Membership in the funds when organized is to be optional for teachers already in the service, but compulsory on new entrants. To teachers who have taught thirty years, of which ten have been in the state, and who have reached the age of sixty, an annuity is to be paid equal to half of the average annual salary for the last five years of service. Similar benefits are to be paid to teachers who served the same number of years but have become incapacitated before the age of sixty, pro-rata annuities being paid when teachers have taught at least twenty years. Teachers who move to districts outside the bounds of their retirement associations are permitted either to transfer their membership or to continue as absent members. No arrangement is made under the Utah plan for meeting accrued liabilities except that teachers must, before becoming eligible for a pension, pay a sum equal to one per cent of the entire salary earned during the years of service claimed. The financial arrangements of this system are so obviously inadequate, based as they are on an insufficient annual contribution and the uncertain revenue from deductions for absences, that early difficulties may be predicted.

The Vermont pension system is conducted on a coöperative basis by the state and the Vermont Teachers' Retirement Fund Association. The association was founded in 1910 "for the purpose of receiving donations and bequests, and distributing the revenue arising from the same in aid of deserving teachers who have taught a term of years . . . or of teachers who, by reason of age or infirmities, have become incapacitated for further service in the public school work of the state." The state law which came into effect in 1913 established a fund which is to consist of teachers' contributions of an amount to be fixed by local authorities, donations, legacies, gifts, and bequests, and appropriations from the General Assembly, and the income and interest arising from the fund. The fund is controlled by a board of five members, two of whom are teachers. The amounts collected by the association are handed over to the state fund; and an equal sum is appropriated annually by the state, but only up to a maximum of \$10,000. Teachers who have taught twenty-five years in the public schools of the state and teachers who have been in service for thirty years, of which at least twenty have been in the public schools of the state, are entitled to receive a life annuity equal to one-half the amount of the average salary received during the last five years of their service, provided they have paid into the fund a sum equal to forty per cent of the annuity to which they claim to be entitled. No

pension, however, is to exceed \$500 a year. The board has power to grant aid to teachers incapacitated for further service, but no allowance under this head may exceed the amounts granted as pensions. Teachers who receive pensions must retire from all paid work on reaching the age of sixty. The board has power to prorate the allowances made, to consider the priority of the claims of the different classes as described above, and has full discretionary power to withhold payment in order that the income of the fund may be added to the principal. The fund is already inadequate to meet the claims that must accrue very shortly in a school system employing more than 3500 teachers. As in many other instances, it would have been wiser to postpone the introduction of a pension system until the financial circumstances warranted, rather than to establish a system on the insecure basis of what is practically a charitable fund and of teachers' contributions of an uncertain and arbitrary character, supplemented by an inadequate state appropriation.

In addition to the states here discussed pension legislation is still pending in two others, but without much hope of success. In the state of Washington the legislature has passed a pension law, but tacked on a section requiring the approval of the people at the elections to take place in November of this year. A campaign has already been begun, under the charge of a committee of county superintendents, to secure the passage of the bill at the referendum. While it is thought that no difficulty will be encountered in the cities, much opposition is expected in rural districts and from young teachers who do not look to teaching as a life-long profession. The bill provides for the appointment of a board of trustees of five members, including two teachers eligible to the benefits of the law. The fund is to be made up of gifts, legacies, bequests, etc., a tax levy equal to twenty cents for each child of school age in the state, teachers' contributions, and interest on investments. The tax levy, it is estimated, will raise about \$55,000 annually, less than is required to pay the maximum annuity provided for one hundred members. The assessments on teachers' salaries are according to a scale: a contribution of one per cent on salary is paid for the first ten years of service, two per cent for the next ten years, and two and one-half per cent for the third period of ten years. A maximum of \$50 assessment in any one year has been fixed, and all teachers must have paid \$1000 into the fund before becoming eligible to the pension. No estimate has yet been made of the amount that is likely to be added to the fund from this source, since it is declared to be impossible to estimate the number of teachers who are likely to become members of the fund. All teachers may retire after thirty years' service, of which fifteen must have been in the public schools of the state, on an annuity equal to half the average annual salary obtained in the five years preceding retirement, the minimum being \$300 and the maximum \$600. Women teachers may retire after twenty-five years' service, fifteen of which must have been in the state, on an annuity equal to as many thirtieths of the full annuity as the years of total service. Disability allowances, similarly calculated, may be granted after ten years' service. In the case of resignation,

but only after three years' service, half of the teacher's contributions is refunded; in the case of death before or after retirement, all the member's contributions remaining in the fund are returned. The law, if passed, will become effective on March 1, 1915, when present teachers must declare whether they will become members of the fund; membership is compulsory on all new teachers. Beyond the requirement that members must have paid \$1000 into the fund before retirement, no adequate provision is made to meet accrued liabilities. The calculation of the annuities to women retiring before the completion of thirty years' service and of the disability allowances is based on the average annual salary for the last five years of the thirty years' service; the inference can only be that teachers cannot expect any increment of salary in that period. The provision for the earlier retirement of women, however, is certainly to be commended, but it does not seem to be recognized that women's pensions are more expensive than are those for men. No arrangement is made for periodical actuarial revision of the status of the fund.

The teachers of Wyoming are continuing to press for pension legislation, but at present have little hope of success in view of the constitutional objections. The Constitution, Sec. 6, Art. 16, provides that "neither the state nor any county, city, township, town school district, or any other political subdivision, shall loan or give its credit or make donations to or in aid of any individual, association or corporation, except for necessary support of the poor." On the basis of this rule the acceptance of a pension would involve a declaration of poverty, an acceptance which would at once put the pension on an entirely false basis. It is probable, however, that the prohibition may be overcome by a general campaign of the teachers, a method that is being employed in other states where similar obstructive measures prevail.

The teachers of Illinois are pressing for a state pension law. A bill has already been prepared, and it is hoped to have it enacted and in operation by 1915. At present, cities with a population between 10,000 and 100,000 are permitted to establish pension funds, but only two cities have availed themselves of this power. The new bill provides for a state system controlled by a Board of Trustees of the Teachers' Insurance and Retirement Fund of five members, including three members elected by the teachers. Membership is optional with present teachers, but compulsory on new entrants. Teachers are to be assessed one per cent per annum, but not more than \$15 per year on their salaries for the first ten years, and two per cent per annum, but not more than \$30, for each successive year until the completion of twenty-five years' service. The total contributions must amount to \$400 before members become entitled to pensions. The state is to appropriate annually fifteen cents for each person of school age in the state, and the fund may be further supplemented by any other legal source of revenue. After twenty-five years' service, of which eighteen must have been spent in the public schools of the state, members may retire on an annuity of \$16 for each year of service, with a maximum annuity of \$400. Disability allowances may be made after eighteen years' service. In case of withdrawal for any cause, three-

fourths of the teacher's contributions are returned without interest. It will be noticed that no age limit is fixed for retirement, so that there is nothing to prevent a teacher from claiming a pension while in full vigor and health, a factor which has clearly not been taken into account in fixing the scale of assessments and the amount of the pensions, and which would prove a great drain on the fund. Nor is there any provision for the medical reëxamination of teachers retired for disability. The question of accrued liabilities is hardly met by the requirement that \$400 must have been contributed to the fund before a pension can be claimed. There is no arrangement for periodical actuarial review.

The pension movement in Iowa is also being carried forward by the State Teachers' Association, which, thru its Retirement Fund Committee, has drafted two teachers' annuity bills. These are being submitted to the members of the association, and the scheme selected will presumably be brought before the legislature. While such a course may be commended as highly democratic, it may be doubted whether the ordinary teacher is in a position to decide on the merits of a pension scheme beyond the appeal it may make to him thru the amount of the assessment or the amount of pension promised. The first bill is extremely interesting as an attempt to embody the principles of the Massachusetts Teachers' Retirement Law of 1913. It provides for the appointment of a Retirement Board of seven members, including four teachers to be appointed by the state superintendent. The retirement fund is to be kept in three distinct divisions: the annuity fund derived from assessments paid by teachers and used to pay annuities and refunds; the pension fund derived from state taxes and other legal sources, and used to pay pensions; and the expense fund derived from state taxes. Membership in the fund is to be optional on teachers in service at present and for the two years following the adoption of the act, but compulsory thereafter on new entrants. The members may pay assessments of \$54 a year or \$27 a year. Teachers become eligible for retirement at the age of fifty-five years, provided they have had thirty years' service, of which twenty, including the last five, have been in the state. Teachers between the ages of fifty and fifty-four who have had twenty-five years' service, of which twenty, including the last five, have been in the state, may be retired because of disability. The retirement allowance is to consist of an annuity which the teachers' accumulated assessments would yield at the time and age of retirement, supplemented by a pension of not less than \$200 nor more than \$300. The bill makes most generous provisions for refunds; in case of withdrawal or death all the assessments are to be returned with compound interest. The alternative bill reproduces most of the features found in other schemes. The Board of Retirement is to consist of five members including two teachers, one of whom is to be appointed by the governor and the other to be elected. The retirement fund is to be divided into the current fund, derived from the proceeds of a state tax of one-half of a mill on the dollar levied on taxable property, and the interest on the permanent fund; and the permanent fund, derived from teachers' assessments of \$5 a year payable for twenty years, gifts, bequests,

etc., and any surplus remaining from the current fund. Teachers who have completed twenty-five years' service, of which twenty, including the last five years, have been in the state, may retire on an annuity of \$300 between the ages of fifty and fifty-four, and of \$450 between the ages of fifty-five and fifty-nine. Teachers who serve twenty years in the state and reach the age of sixty may retire on an annuity of \$600. A disability allowance of \$300 a year may be paid on proof of permanent disability after fifteen years' service. No pension or allowance, however, may be paid unless the contributions amount to \$100. Membership is to be compulsory after June 1, 1916. There can be no hesitation on comparing the two schemes in deciding in favor of the first. Not only are the assessments and number of payments too low under the second plan, but the pension granted appears inadequate, altho probably promising far more than the funds warrant. The first plan may be improved in certain respects. The constitution of the retirement board may be made more democratic by providing for the election rather than appointment of the teachers' representatives. The assessments appear somewhat high for the first few years of service; the same result could perhaps be achieved by a graduated scale of payments and distributing the burden as the salary rises. Under the plan retirement is voluntary on the part of teachers; since the state makes a liberal pension grant, it should receive some power to retire teachers compulsorily. Some arrangement for medical reëxamination of teachers retired for disability should be provided. The refunds proposed are the most generous provided in any system. There is no reason why a sufficient sum should not be withheld to pay for the expenses of administration, which could easily be done by returning assessments with simple instead of compound interest. The plan could be greatly strengthened by a provision for periodical review by an actuary. It will be interesting to see the development of the present experiment of presenting the type of retirement plan to the choice of the teachers, while the details of the selected type "can easily be worked out and the measure elaborated in accordance with sound economic principles." Better policy would have dictated the assurance of several sound plans and the presentation of options before the teachers later.

LOCAL SYSTEMS

In the Seventh Annual Report reference was made to six states, Kansas, Kentucky, Minnesota, Utah, Ohio, and Illinois, which have general laws permitting the establishment of local pension systems. Similar legislation also exists or has been recently introduced in the following states—Colorado (1909), Indiana (1913), Nebraska (1909), Oregon (1913), and Pennsylvania (1911).

The Colorado School Law of 1909 provides for the establishment of a public school teachers' retirement fund in school districts of the first class under the control of the local board of school directors. The system is non-contributory, the fund being secured by a special levy upon the school district of a sum not exceeding one-tenth of one mill, and from any gifts or bequests. Teachers who have reached the age of sixty,

if men, and fifty-five, if women, and have taught for twenty-five years, of which at least fifteen must have been in the school district concerned, may be retired on a pension of not more than \$40 a month. The board is permitted to make provision for teachers who become incapacitated for further service, provided that they have taught in the school district for at least ten years. The city and county of Denver, as School District No. 1, has established a retirement fund under this law, and grants retiring and disability allowances of \$30 a month.

Indiana has extended the pension facilities within the state by two acts which supplement the pension law of 1907 for teachers in cities having a population of 100,000 or more—at present available only in Indianapolis. By an act of 1913 a teachers' retirement fund was created in cities with a population of not less than 55,000 nor more than 60,000; the city of Terre Haute alone came under this provision. In the same year another act permitted the establishment of teachers' retirement funds in cities with a population of not less than 20,000 nor more than 100,000. The pension provisions of both acts are the same. A board of five pension commissioners, of whom three are teachers elected by their colleagues in the service, is established. The pension fund consists of gifts, bequests, etc., of a tax of one-fourth of one mill on each \$1 of taxable property, and assessments on teachers' salaries. The contributions vary according to a scale—\$10 for the first twelve years of service, \$20 for the next eight years, and \$25 for the remaining years of service up to thirty. Before becoming entitled to a pension teachers must have paid in a sum equal to half of the maximum annuities which they are to receive. Eligibility to the pension begins after twenty years of service, of which not more than twelve may have been in cities of similar size to that paying the pension. A scale of payments ranging from a minimum of \$300 to a maximum of \$600 is provided for each year of service from twenty up to thirty or more. Retirement before the completion of thirty years of service, however, depends upon the consent of the board of commissioners. In the case of withdrawal from the fund for any reason, members are entitled to a return of all their contributions without interest. The most striking omission in these laws is that the systems are not made compulsory. The introduction of graduated scales of assessments and pension payments are commendable features, but no care seems to have been taken to make the scale of payments bear any relation to the contributions from teachers. Indeed, no protection is afforded to the fund in the way of providing for periodical actuarial investigation. The only measure of this kind is the permission granted to the commissioners to prorate the payments when necessary.

The Nebraska pension law of 1909 applies to all metropolitan cities. Local boards of education may establish and manage pension funds which are to be made up of teachers' contributions of from one to one and a half per cent of their annual salaries, and contributions from the local authorities of sums not less than one and a half times the amount of the teachers' assessments. Teachers may retire voluntarily after thirty-five years' service, of which twenty must have been in the schools of the city

concerned; and must retire after forty years' service. The annuity on retirement is \$500 a year, proportionate amounts being paid in the case of retirement for disability after twenty-five years' service. Omaha is the only city to organize a pension fund under this act.

A Teachers' Retirement Fund Association was established in 1912 by the teachers of Portland, Oregon, under a state law applicable to school districts having more than 10,000 children of school age. Under this law the formation of the association is voluntary, must receive the approval of the local board of directors, and be legally incorporated. But once it is organized, all new teachers must become members. The funds of the association are made up of gifts, bequests, etc., of a sum paid by the board of school directors equal to three per cent of the amount of tax received as part of the county school levy, and of the fines, penalties, and forfeitures collected from teachers. Under the by-laws of the Portland Association teachers are assessed in sums which after thirty years' payment make a total of \$600. Teachers may retire after thirty years' service, of which ten years shall be in the school district of Portland, on an annuity of \$500, or in case of disability after twenty years' service on an annuity of two-thirds of this maximum. The disability allowance increases with each additional year of service. In case of resignation teachers are entitled to a refund of any amount paid into the fund above \$300; in other cases of withdrawal all the money paid in is returned, without interest.

Constitutional prohibitions prevent the establishment of a state pension system in Pennsylvania. The school laws of 1911, however, permit the school directors of any district "to establish, contribute to, and administer" teachers' retirement funds which may be made up of gifts, bequests, local appropriations, and teachers' contributions. When teachers pay contributions they must under these laws be represented in making the laws governing them and have a voice in the control and management. Up to the present, only Philadelphia has adopted a teachers' retirement plan under these laws, altho Pittsburgh, Allegheny, and Harrisburg have pension systems under their own charters. The Pennsylvania State Teachers' Association at a recent convention undertook to conduct a campaign in favor of state pensions for teachers.

NEW YORK CITY PENSIONS

The recent history of the pension system established for the American employees in the public service of the city of New York affords an interesting and pertinent object lesson. It illustrates by a cumulation of instances what may be expected of any pension system that is adopted without scientific basis and actuarial advice and supervision. Uncertain sources of income, contributions inadequately proportioned to benefits promised, and haphazard methods of administration, devoid of any conception of the simple mathematical considerations involved, bear in themselves the seeds of bankruptcy. It should perhaps be mentioned that actual maladministration or misappli-

cation of funds has played but a negligible part in bringing about this result. The case is therefore all the more clear and urgent for insisting on the need of sound professional advice, not only at the inauguration but at stated periods in the existence of a pension system.

Eight pension funds have been established in New York City at different dates, as follows: Public School Teachers' Retirement Fund, Police Pension Fund, Fire Department Relief Fund, Department of Health Fund, College of the City of New York Fund, Supreme Court Appellate Division Fund, Street Cleaning Department Fund, and the City of New York Employees' Retirement Fund. No one of these funds bears any mark of resemblance to any other; they are separately administered; each has its own source of income and regulations for disbursement of benefits; no principles are embodied, and chaos reigns supreme. The majority are now compelled to declare themselves bankrupt. The chief features of each system may be stated briefly; the financial details for the years 1905 to 1914 are based upon a recent report of the Comptroller of the City of New York.

The Public School Teachers' Retirement Fund is derived from deductions of one per cent from the salaries of teachers and supervisors, from donations, gifts, and legacies, from fines for absences, from five per cent annually of excise moneys or license fees of the city, from interest, and from all such other methods as may be legally devised. In the nine-year period covered by the report the total receipts of the fund have been \$7,216,281.74, which included the teachers' contributions to the amount of \$1,778,487.18, or about twenty-five per cent of the total. During the period the total yearly receipts have increased thirty-nine per cent, while the disbursements for pensions increased one hundred and ten per cent; in other words, the outgo exceeded the income by seventy-one per cent. To meet the claims for 1913 an appropriation of \$200,000 was required, which reduced the funds that will be needed in 1914 by that amount. The fund is accordingly bankrupt in 1914. It is expected that the deficit will grow from \$383,902 in 1914 to \$903,251 in 1918, that is, \$3,152,838 in five years. An actuarial investigation of the fund was made in 1912, and as a result of the report, issued in the following year, the Board of Retirement curtailed so far as possible the refunds of absence deductions temporarily and appointed a committee to suggest a temporary scheme until the report of the Mayor's Pension Commission should appear. But any plan based on the present system would be merely a palliative. As was pointed out by the actuary, the contributions of teachers bear no relation to the contemplated pensions, which at present are granted too liberally; the fund has been depleted by the payment of pensions to teachers who were in service before the system was instituted, and who therefore made only partial contributions to the fund, with the result that the contributions of new entrants which should be used to build up the fund are being used to pay the pensions of the older teachers; the refunds for absence deductions have been too generous and not sufficiently safeguarded in the interests of the fund; finally, the pensions have not been used for their legitimate purpose,—the pro-

tection of old age,—but have been paid at the earliest possible opportunity. A bill to permit an encroachment on the \$800,000 reserve required by law was wisely vetoed by Governor Glynn on the advice of the Board of Estimate and Apportionment and the Citizens' Union. It is charged against those responsible for the administration of the fund that the amount of pensions granted since 1909 has been in excess of the yearly receipts in spite of the law, which limits the number of retirements in any year by the amount of the fund for that year. There have also been cases where teachers have been retired in good health and in full vigor, only to increase their pensions by tutoring, by writing text-books, and by other pursuits. But these facts are merely indications of a complete inability to appreciate the needs of the situation and the elementary principles of pension theory. The present system cannot be improved by any stopgap methods; the only solution is an entirely new system on a new basis. The action of those bodies that opposed the adoption of hasty pension legislation at the present juncture is to be commended.

The condition of the Police Pension Fund was described in the last Annual Report. The fund is derived from a large number of sources, including contributions of two per cent of monthly salary by the members, deductions for absences, forfeitures, liquor tax, moneys from issue of permits to carry pistols and for masked balls, unexpended balances of appropriations for salaries, special appropriations for pensions, and gifts and bequests. The total receipts of this fund from 1905 to 1914 were \$15,134,315.07, of which \$4,103,476.32, or about twenty-seven per cent, were contributed by the members. While the total yearly receipts increased but eight per cent, the disbursements in the same period showed an increase of seventy-eight per cent. Without the aid of direct appropriations by the city to cover deficiencies, which increased from \$193,946.26 in 1905 to \$1,320,538.34 in 1914, the fund would have been bankrupt from the start.

The Fire Department Relief Fund is non-contributory, and has depended for its income on fines and deductions from salaries, rewards, gifts, city appropriations, ten per cent of the excise fees, proceeds from licenses and fees collected under the laws relating to fire prevention and storage of explosives, and proceeds of sales of condemned personal property in use by the department. The total yearly receipts of this fund increased forty per cent from 1905 to 1914, while the total disbursements increased seventy per cent. The fund was thus unable to meet its claims in 1913.

The Department of Health Fund, while not yet bankrupt, is approaching that state. The fund derives its income from contributions of one per cent of members' salaries, which are not compulsory, and fines for violation of the sanitary code. The contributions in the nine-year period have amounted to twenty-three per cent of the total receipts, or \$89,910.01 out of \$400,636.32, while the disbursements have been \$317,291.95.

The College of the City of New York Fund is based on an appropriation of one per cent of the liquor licenses and as much more as may be required to meet the claims.

No contributions are required from members. Under this scheme the system has been solvent.

The Appellate Division Fund is also provided for in a similar way by annual appropriations, to which is added the unrequired balance of salary appropriations. The requirements of the fund have always been small.

The Street Cleaning Department Fund was organized as recently as 1911. Profiting to some extent by the history of other funds, contributions were fixed at three per cent of the annual salary of the employees, probably among the poorest paid in the public service of the city. To this sum so raised are added fines, proceeds of the sale of ashes, refuse, garbage, condemned horses, vehicles, boxes, etc., found in the street, gifts, and the unexpended balance of salary appropriations. The receipts from the time of organization in 1911 to 1913 were \$852,419.49 and the disbursements \$131,407.14.

The City of New York Employees' Retirement Fund is supported out of excise moneys of the city; it is non-contributory and the claims on it are small, the pensions paid out in nine years amounting only to \$70,370.05.

The total receipts of all the pension funds from 1905 to 1914 were \$29,924,944.70. To this total the employees contributed in assessments from salary and deduction for absences \$6,569,841.68, or twenty-two per cent, and the city \$23,355,103.02. Of the city's contribution the sum of \$9,276,312.37 was paid by way of direct appropriation and \$14,078,790.65 was granted from the miscellaneous sources already enumerated, a sum which otherwise would have found its way into the city treasury.

An attempt is now being made to obtain the real facts of the present chaotic situation, which concerns some 8000 pensioners and involves an expenditure of about \$4,000,000 annually. The facts leading up to the appointment of the Perkins Pension Commission in 1913 were described in the last Annual Report. The object of the commission is to investigate "the general subject of pensions and to report definite recommendations for a law that would combine all municipal pension systems into one." The commission has held public hearings, and has engaged experts to gather the necessary facts. At the same time the different interests have attempted to secure special legislation and new bills. There is, however, some indication that the suggestion of the Board of Estimate and Apportionment to the numerous departments of the city service has been accepted, and the report of the commission will be awaited before further action is taken.

This, the first commission of its kind to deal with the pension problem of a large city, will endeavor for the first time to recommend a city pension system scientifically established on a basis of facts which are now being collected from present and past employees as well as pensioners. The Board of Estimate and Apportionment has appropriated \$50,000 for the investigation, which is being conducted on behalf of the commission by Mr. Robert von Reutlinger. A pension scheme to cover more than 100,000 employees in services involving different types of risks will present innumer-

able problems. Among the chief of these the commission will have to consider the advisability of appointing a permanent pension board, of introducing a single system for all employees, of fixing a uniform age for retirement in place of a service term, and, most important of all, the source of the funds. The last problem will involve a decision on the amount of contributions to be exacted from employees and the extent to which special municipal revenues should be held responsible, if at all. Stricter measures will have to be adopted to prevent such abuses as have crept into the present scheme, such as the retirement of employees while in the full enjoyment of health and vigor, and their reappointment to other positions. The commission will also be enabled, on the basis of the facts collected, to offer a definition of disability, which up to the present has been arbitrary and a greater source of abuse than any other cause. The staff of the commission contemplates an ambitious program, but every part appears to be essential if the investigation is to be thorough in detail and authoritative in its recommendations. The census of the entire municipal service will indicate for the first time the actual requirements which any pension plan must ultimately meet, while a consideration of the existing funds and their operation will serve to protect the commission against the dangers and mistakes so far incurred. It is planned also as part of the present investigation to make an analysis of existing pension systems in the United States and abroad. Such a study, supplemented by a bibliography of pension literature and a classification of points to be considered in framing a pension scheme, should afford the most valuable guide that has yet appeared. But valuable and comprehensive as the study will be, the ultimate cogency of the report and its recommendations must depend upon the care and consideration devoted to the purely mathematical and actuarial aspects of the question. If granted a free hand, adequate financial support, and above all sufficient time for thorough work, the commission has an opportunity of producing a report which should be serviceable to New York City in coping with its immediate problem and authoritative for other public bodies faced with similar problems.

MUNICIPAL PENSIONS FOR TEACHERS

The increase in the number of state pension systems does not as a rule affect pensions in the larger cities which operate under their own charters. The growth in the number of states that have adopted permissive pension legislation is sure to be accompanied by an increase in local municipal systems. Since the establishment of pension systems of this type is comparatively recent, it is impossible as yet to present any statistics. An interesting summary has, however, been prepared by the Bureau of Census, and has been published in the volume on *Financial Statistics of Cities having a Population of over 30,000: 1912*, issued in 1914. The report deals with one hundred and ninety-five cities, of which fifty-three provided pensions and gratuities for teachers, while five others had funds for that purpose. Only thirty-eight cities out of the

total of fifty-eight had permanent pension trust funds; the remainder paid gratuities directly from the school district or city corporation treasury. Of the total amount disbursed in 1912 for pensions, \$1,702,811, the first group paid \$1,622,426, or 95.3 per cent, and the second group only \$80,385, or 4.7 per cent. Many cities of the second group have since 1912 adopted permanent pension funds. The pensions or gratuities paid by these cities were usually small, and granted in exceptional cases at the discretion of the local board of education.

The pension assets of the thirty-eight cities which had permanent funds with investments for pension purposes amounted in 1912 to \$4,134,488, from which the sum of \$1,622,426 was paid out in pensions, \$13,072 for expenses of administration, and \$1,398,717 for investments purchased. The total receipts amounted to \$1,968,977, of which \$1,085,295 was revenue on fund income. The largest source of this income was the receipt from teachers' contributions, aggregating \$917,252, or 84.5 per cent; income of investments contributed \$162,048, or 14.9 per cent; and \$5995, or .6 per cent, came from gifts. To the total receipts there was contributed \$883,682, or 44.9 per cent, from the general fund of the school district or appropriated by the city corporations from the general fund. The pension payments for 1912 amounted to \$1,702,811, of which \$1,382,413, or 81.2 per cent, was paid by cities with a population of 500,000 or over. The payments of cities with a population of 300,000 to 500,000 aggregated 9.1 per cent of the total; and of cities with populations of 100,000 to 300,000, 50,000 to 100,000, and 30,000 to 50,000, amounted to 6.2, 2.3, and 1.2 per cent respectively. New York City paid the largest share of the total pensions, \$989,324, or 59.3 per cent, being spent by that city alone, while of the total assets of pension funds of \$4,134,488, the same city reported \$1,036,922, or 25.8 per cent.

Not only has the pension idea been more widely adopted by the larger cities, but, as these figures indicate, the total expenditure of the smaller cities is infinitesimal when compared with that of the larger. So long as pensions continue to be regarded as gratuities rather than as measures for securing efficiency, so long are they likely to play an insignificant part in educational finances. Another question is whether a small system can administer a pension system efficiently. While there are no statistics on the subject, the guess may be safely hazarded that pension payments under the schemes of small cities acting independently are smaller in amount than in those cities which subscribe to a general state system. The example of Massachusetts alone should act as a stimulus towards securing state coöperation. In this Commonwealth the pension system covers the whole state with the exception of Boston, and even the metropolis might profit by being brought under the general scheme. As things are at present, and as is indicated elsewhere, the large systems do not offer a certain guarantee of efficiency, but they at least possess the elements of probability.

A further consideration aroused by a study of the figures here presented is the extent to which a pension system may rely on such aids as gifts, bequests, legacies, and donations, all of which find a place in pension schemes, or the extent to which income

from investments may be looked upon as a fruitful source of increment. More than ninety-one per cent of the total receipts come from teachers' contributions and city appropriations of the local authorities, while the gifts supplement the total receipts by only 3 per cent. Altho no figures are given, it will be found that fines for absences or violations of the regulations form an equally unstable source of income. The statistics, on the whole, afford valuable support for those who argue that the teachers' contributions should be used to purchase annuities, and that the local appropriations should supplement these annuities. Whether the general administration of the funds should be in the control of a lay pension commission, or whether it is more expedient to employ the services of several insurance companies—a plan which is finding increasing favor in England—is a matter which cannot be decided without further data. The most patent fact is that pension funds for teachers must rely mainly on teachers' contributions and local appropriations, and only to a small extent on other sources which, even if they were not small, will always be variable quantities.

INDUSTRIAL PENSIONS

INDUSTRIAL pension systems continue for the present to increase. It is probable, however, that the more general introduction of workmen's compensation laws may affect their spread. It is still generally felt that the large employers of labor can treat their employees more liberally by providing pensions and gratuities themselves rather than under the compulsion of state laws. But whatever truth there may be in this attitude, the fact still remains that the number of employers who voluntarily establish benefit funds is small, and that legislation is necessary to compel the majority. Altho workmen's compensation laws do not provide for those who reach old age without disability, there are cases where the cost of a compulsory insurance scheme, such as that recently introduced in New York state, does affect pension systems adversely.

The industrial pension system still continues to be non-contributory, the employer providing the funds entirely. The establishment of a pension system nowhere involves contractual obligations on the part of the employees, and the employer always reserves the right to himself to alter, modify, or discontinue the system. The employee does not acquire any rights to permanent service because of the introduction of pensions. The following systems are typical of those pensions here called industrial, that is, pensions established by railway, industrial, and commercial concerns.

The Pullman Company has adopted a pension plan which became effective on January 1, 1914, whereby pensions of one per cent of the average monthly pay in the last year of full employment multiplied by the number of years of service are paid to employees who have served twenty years or more and have reached, if men, the age of seventy, and if women, the age of sixty-five. No pension is to be less than \$15 a month. Allowances are paid in cases of disability after twenty years or more of service.

The company bears the whole cost of the plan. After the effective date of the scheme no new employees may enter the service if over forty-five years of age. The company has in its service about seven thousand employees.

The Tide Water Oil Company of Bayonne, New Jersey, by its system of indemnities and pensions, which became effective on March 1, 1914, provides for the automatic retirement of employees who have reached the age of seventy and have been twenty years in service; the voluntary retirement of those who have reached the age of sixty-five and have been twenty years in service; and the retirement on the recommendation of the Retirement Committee with the approval of the Board of Directors of employees who have reached the age of sixty and have had twenty years of service. The company provides all the funds required to pay the pensions, which consist of one per cent of the average wage for the ten years preceding retirement multiplied by the number of years of service. A minimum pension of \$20 a month is assured. Payment of pensions is continued to the widow and minor children for one year after the death of the pensioner.

The pensions of the Westinghouse Airbrake Company, which were introduced on January 1, 1914, are borne by a fund of \$100,000 and all additions required. The solvency of the fund is guaranteed by the company. All employees must retire at the age of seventy, and those who have reached the age of sixty-five may be retired by the Pension Board, if deemed for the best interests of the service. A pension of one per cent of the average pay during the past ten years of continuous service for each year of service, but not less than \$20 nor more than \$100 per month, is to be paid. In cases of accident, pensions are paid by the company to the dependents of the employee concerned. Other benefits are also provided. Employees who are retired are permitted to engage in other work or business provided it is not prejudicial to the interests of the company,—a principle which is beginning to find general favor in other pension systems.

The Edison Electric Illuminating Company of Boston established its pension system in 1913, and provides for the voluntary retirement of employees who have had fifteen years' service at the age of sixty-five, if men, and sixty, if women. The Retirement Committee of the company may, at its discretion, retire employees who have had twenty years' service and have reached the age of sixty, if men, and fifty-five, if women, or who have had thirty years' service, irrespective of age. The pension consists of one per cent of the average annual salary during the last ten years of active service multiplied by the number of years of service. A minimum pension of \$300 is provided. Death benefits are paid by the company under certain circumstances.

The National Bank of Commerce of New York adopted, on December 24, 1913, a combined pension and insurance system, the whole cost being borne by the bank. Employees may retire at sixty, and must retire at sixty-five, on a pension of two per cent of the aggregate salary during continuous service, with a maximum fixed at \$5000. The bank further pays the premiums of those employees who are physically

eligible for a life insurance to the amount of one year's salary at the time of death, the maximum amount, however, not to exceed \$5000. The premiums are also paid on behalf of physically eligible employees to purchase disability allowances of eighty per cent of the annual salary earned at the time of the disability for the first year, and sixty per cent for life thereafter. The bank continues to pay full salary during the first month after the disability occurs, and the insurance payments are made thereafter. The bank established the combined system, "believing that greater efficiency will be attained, permanency of employment encouraged, and a larger spirit of satisfaction and security fostered."

The pension system of the Guaranty Trust Company of New York, which came into force on January 1, 1914, is paid out of a fund appropriated from the profits from time to time. Employees who have had forty-five years' service, or who have reached the age of sixty-five and have had fifteen years' service, or who are retired at the discretion of the company, receive pensions of two per cent of their average annual salary for the last three years of service multiplied by the number of years of service. The minimum pension is \$300 and the maximum \$5000. The company may pay all or part of the pension to widows or dependents in the event of the death of the pensioners.

The New York Zoölogical Society has adopted a most generous pension scheme for its employees, one which is dictated more by sentiment than warranted by the financial conditions contemplated. The scheme provides for pensions and disability allowances to employees, and also for death benefits and pensions to widows and dependents. But while one can only admire the breadth and liberality of the conception, the funds which the society has at its command at present are hopelessly inadequate. The society employs one hundred and thirty-six persons at the New York Zoölogical Park and thirty at the New York Aquarium, who would be eligible to benefits of the scheme. The one hundred and sixty-six employees show an age range from under eighteen to over seventy, with great variation in the number of years of service. There is further considerable variety in the class of occupations, from those requiring low skilled labor to those requiring specialized training, resulting in a wide distribution in the salary scale. The society is relying on a contribution of \$100,000 received from Mr. Andrew Carnegie, which is to be held in trust as the Carnegie Pension Fund. It is hoped to supplement this by other donations. The society undertakes to contribute an annual sum of \$8000, including the income from the Carnegie Pension Fund, while employees electing to become members of the pension fund are to contribute two per cent of their annual salaries. Pensions and other benefits are to be paid out of the income of the fund. Permanent employees have the option of subscribing to the fund, if in the case of men they are over twenty-one years of age, and in the case of women over eighteen. All new employees between the ages of twenty-one, if men, eighteen, if women, and forty-five must subscribe to the fund provided that they pass a medical examination. Pensions of different amounts are to be paid, varying with age and years of service. Thus male employees who have reached the age of seventy

and have had fifteen years' continuous service may be retired on a pension of thirty per cent of their average annual salary for the last three years of service, with an increase of two per cent for each additional year of service up to twenty; a minimum monthly pension of \$20 is to be paid in this class. Male employees who are sixty-five years of age and have had twenty years' service may retire on a pension calculated in a similar way, with an increase for each year of service up to twenty-five; the minimum pension payment is to be \$25 a month. Male employees who are sixty-five years of age and have had twenty-five years' service may retire on a pension of forty per cent of their average annual salary for the last three years of service, with an increase of two per cent for each additional year up to thirty years; the minimum is \$30 a month. Finally, a pension of fifty per cent calculated in the same way, with a minimum monthly payment of \$35, is to be granted to male employees who are sixty-five years of age and have had thirty years' service. Women employees are entitled to similar benefits on the same terms as the men, but become eligible for them five years earlier. In case of death pensions are also to be paid to the pensioned employee's widow. Other benefits were at first contemplated, such as pensions for widows of subscribing employees, and pensions for widows and dependent survivors of subscribing employees who died as a result of injuries received in the line of duty, but have for the present been suspended. A declining insurance feature provides for the payment to the beneficiaries, in the event of the death of a pensioned employee, of one year's average salary for the entire period of membership after deducting all payments on account of the pensions. Disability allowances similar in amount to the sum that would have been paid in the event of retirement on the first eligible pension are to be paid on a vote of the Pension Board, but provision is made for periodical medical reëxamination. Any sums received under the Workmen's Compensation Law, or as a result of legal procedure against the society, are to be considered in lieu of pensions. Assessments contributed by employees are refunded with compound interest at three and one-half per cent on leaving the service or discharge before becoming eligible to the pension. The funds which the society has under its control for the purposes of this pension scheme cannot bear the load. It is hardly necessary under the circumstances to enter into any criticism of details. The complete absence of consideration of accrued liabilities is an omission which will throw the burden of the scheme on young employees and will prevent the building up of a fund. A similar defect is the requirement of a uniform assessment on all employees, no matter what their ages are. Members whose subscriptions lapse for six months are considered to have withdrawn from the scheme,—a loophole which is only too simple and which will mean an incalculable loss to the fund. The rate of assessment may be reduced at any time, thus introducing a dangerous precedent. The rules provide for the granting of disability allowances at the discretion of the board, another feature which militates against a sound estimate of the requirements. The basis of three years' salary employed in calculating the pensions is too short a period. It is doubtful, on the whole, whether a sound system on any basis can be estab-

lished in a service with so few employees and with an age and salary distribution as wide as it is in the service of the society. It would probably be more secure to base the system on a personal account as between the society and the individual employees, the assessments of the employees being used to purchase annuities, while any funds which the society may have at its disposal could be used to supplement these annuities, to purchase life insurance policies or insurance policies against disability. The society has at least had the benefit of sound actuarial advice, and in embarking on the present scheme it is not acting without warning. It remains to be seen whether the donations and contributions on which the society appears to rely will be forthcoming to save the pension scheme from the disaster that is being courted.

FEDERAL PENSIONS

THE expenditure of the national government on pensions to war veterans and their dependents has for the first time in the history of these pensions begun to decline. Between June 30, 1913, and June 30, 1914, the number of veterans of the Civil War fell from 497,263 to 462,379, a decrease of 34,884. The total decrease in the number of pensioners was over 39,000. The total payments on account of pensions in the fiscal year ending June 30, 1913, were \$174,171,660.80, while for the corresponding period ending June 30, 1914, they fell to \$172,417,546.26. The appropriations have accordingly been reduced by Congress from nearly \$180,000,000 for the current year to \$169,150,000 for next year. But it is extremely doubtful whether this retrenchment will continue. The members of Congress appear to be too easily swayed by sentiment when pension matters are brought before them. The number of private bills awarding or extending pension privileges, often in opposition to the decision of the Pension Bureau, continues to be large. The total cost of this country's pension bill from 1865 to 1913 was \$4,761,450,399. There was an increase from \$15,857,714 in 1866 to \$180,300,000 in the appropriations for 1913, while the number of pensioners increased about eight-fold. During the past year (1913-14) pensions were paid to 177 widows of soldiers of the War of 1812, to 893 survivors and 4699 widows of soldiers of the Mexican War, and 915 survivors and 2182 widows of soldiers of the Indian Wars, in addition to the claims on account of the Civil and Spanish Wars. These figures may be compared with similar expenditures by foreign nations. During the fiscal year ending June 30, 1913, Germany paid only \$110,411 in pensions, Great Britain \$117,843, Russia \$3397, and Japan \$7006. How little the financial situation enters into the matter is indicated by the proposal of an amendment to the Spanish War veterans pension bill, introduced by Senator Jones of Washington in June, 1914, providing that all widows of Civil War veterans now entitled to pensions should have their pensions increased to \$20 a month, while in July, 1914, Senator Shively, in an amendment to the pension appropriation bill, proposed that all widows of the Civil War

veterans be given a pension, thus removing the restriction which required marriage before June 27, 1890. Senator Shively's amendment involves an increase of \$7,000,000 a year. Another addition to the pension list is due to the passing of a bill granting pensions to widows and children of honorably discharged soldiers and sailors who served in the Spanish War, in the Philippines, and in the Boxer Campaign, provided the marriage took place prior to the approval of the law. The measure secures a pension of \$12 a month to the widows, and \$2 a month for each child under sixteen. These pensions, it is true, are limited to widows with actual net incomes not exceeding \$250 a year, but the appropriation required will certainly be appreciable.

The indirect consequences of this reckless expenditure of public moneys are more serious than the actual financial burden. As the Massachusetts Commission on Pensions points out, one of the dangers of a non-contributory pension system for public employees is the support that it gives to fresh claimants. Since the principle has been established and adopted by the Federal government, the civil servants of the government are insistent in their demands for similar favors. The recent Hamill Bill to provide for the retirement of employees in the civil service proposed to pension employees in the classified civil service on a non-contributory basis. The bill proposed to grant pensions of fifty per cent of the average salary for the last five years of service after thirty years' service; forty-five per cent for service between twenty-five and thirty years; and forty per cent for service between twenty and twenty-five years. Disability allowances were to be granted on a similar scale: thirty per cent of the average annual salary for the last five years of service for service between five and ten years; forty per cent for service between ten and twenty years; and fifty per cent for service over twenty years. Retirement was to be compulsory for all employees at the age of seventy. The bill failed to pass in spite of the efforts of the organization of civil employees throughout the country. It seems highly probable that no measure will be approved until the civil service employees are ready to support a scheme on a contributory basis requiring assessments on salaries and government appropriations. No valid arguments can be put forward for any other scheme.

PUBLICATIONS OF THE FOUNDATION

THE recent publications of the Foundation have included:

The Seventh Annual Report of the President and of the Treasurer, 194 pages. 1912.

Including discussions of actual and possible systems of college pensions; state, district, and local pensions for public school teachers; industrial and civil service pensions; contributory and non-contributory, subsistence and stipendiary pensions in general; and a review of the administrative, financial, and educational experience of the Foundation; together with comments upon admission to college and to advanced standing, medical progress, college financial reporting, advertising in education, education and politics, and sham universities.

The Eighth Annual Report of the President and of the Treasurer, 158 pages. 1913.

Including discussions of recent pension developments, of the Carnegie Corporation of New York, of the establishment of the Division of Educational Enquiry and its studies of medical education, education in Vermont, and legal education; together with comments on college entrance requirements, the state regulation of higher education, politics and education in Iowa, the improved financial status of college teachers, and college catalogues.

Bulletin Number Seven. Education in Vermont, 241 pages. 1914.

A study prepared at the request of the Vermont Educational Commission, giving the reason for and the method of the enquiry, description and discussion of the entire educational system of the state, with certain conclusions and recommendations, and a brief statistical appendix.

Rules for the Admission of Institutions and for the Granting of Retiring Allowances. Third edition, 10 pages. 1913.

Including the rules adopted by the trustees, and the various interpretations of the rules by the executive committee.

A description of all previous publications of the Foundation is contained in the Seventh Annual Report.

PART II
CURRENT EDUCATIONAL PROBLEMS

STANDARDS AND STANDARDIZERS

PERHAPS no word has been so overworked during the last decade, by those who have to do with professional schools, colleges, and secondary schools, as the word "standards." Americans, perhaps, more than other people are imitative. One sees this quality at its best and at its worst in our colleges, but in the main its tendency is toward a general wiping out of college individualism. What one college does, another must do. Distinctive academic flavors disappear. A common mediocrity remains. In this process the standardizing desire is sometimes a contributor, sometimes a consequence.

The extremes are illustrated by the attitude of colleges, medical schools, law schools, and universities in the use of objective standards such as those instituted for admission. In one group of catalogues one finds these requirements set forth in great strictness only to be completely evaded in the enforcement. All sincerity is abandoned. The college or medical school living on fees will talk with a solemn face about its "standards" and admit any student who has the price. It is safe to suspect the institution that talks loudly about its "high standards." The great resource in such cases is the word "equivalent." The requirement of admission is, perhaps, "a four year high school education or its equivalent." The interpretation of the admissions lies in the word "equivalent." It is a wonder-working word. With its help a coach and four can be driven thru any set of admission requirements. Without this invaluable word worthy colleges would be absurdly embarrassed and many medical schools would be compelled to go out of business.

At the other extreme is a group of institutions and state boards which translate entrance requirements literally. Equivalence with them means identity. A boy may present himself prepared to enter college so far as education goes, but if he lacks some specific study of his high school, nothing else avails. A graduate of the Alabama medical school can be admitted to practice, but a graduate of Edinburgh cannot. This is standardization run to seed.

With the actual choice or enforcement of college standards the Carnegie Foundation has little to do. These standards are set up and administered by the college faculties. The responsibility as to whether they are reasonable and whether they are wisely administered rests with the faculties of colleges, professional schools, and universities. The most that the Foundation is able to do is to bring such questions into the light of public discussion. So far as it has had any influence at all in the matter, this has been directed to the effort to arouse the academic conscience to a sense of responsibility. It has urged that the colleges take into account the needs and aspirations of the high schools, that entrance requirements be made which have relation to their conditions. Above all it has urged that entrance standards be honest; that a reasonable requirement honestly enforced is far more fruitful than a higher requirement constantly evaded. The Foundation has never attempted to dictate to any college what its standards of admission ought to be. It has not hesitated, however, to call attention to the

wide discrepancy which existed, even in the cases of some old and famous colleges, between the standards of admission laid down in the catalogue and those enforced in practice. The only standards that the Foundation has urged upon institutions of learning have been those of common honesty and sincerity.

It is, however, the fate of virtue to be misunderstood, and perhaps it should cause no surprise that this highly virtuous practice of the Foundation has incurred the common lot. Admiring friends refer to it as a "standardizing agency"—an expression which causes a cold chill to run down the backs of the Foundation trustees. The public in one way or another has come to believe that the Foundation has laid down certain arbitrary standards which it is seeking to force upon the colleges of the country. Mr. Andrew Carnegie has been sharply attacked for inventing the "Carnegie units," which with a diabolical ingenuity and a clever use of money he is urging upon the universities, with special and particular designs on religious colleges. A committee of the National Education Association on normal schools at its last meeting "viewed with alarm" the efforts of the Foundation to "control the educational standards of the country," and a Methodist Bishop has solemnly warned the country of the same awful tendencies. The hardest blow has come from an eminent professor of Harvard in a pamphlet entitled "A Plea for Independence in Provincial Education," printed and circulated by Middlebury College. The paper is, in fact, a plea for a state subsidy for Middlebury College, in which the author feels a keen personal interest. He warns the people of Vermont to beware of educational advice from the Carnegie Foundation, for its experts (it may be said in passing that the experts of the Vermont study were mainly drawn from the teaching staffs of Harvard, Columbia, and Wisconsin),—its experts are "professional standardizers." Nothing so cruel as this has been said about the Foundation during all its short life. The only situation I can recall which approaches it was that of a dear old Confederate colonel, whom American students of twenty-five years ago in a certain South German town will recall with affection. When our Civil War ended he shook the dust of America from his feet and went to live in Germany. In twenty years he had grown into a Bavarian, happy and content, but still cherishing in his bosom the memory of the lost cause. In this process he was greatly cheered by the Bavarian prejudice against everything Prussian. Only one thing disturbed his perfect peace, and this was the custom, almost universal in South Germany, of calling all citizens of the United States "Yankees." Even this he came to accept with resignation, only now and then protesting, "I fought fo' long years against the Yankees, and yet everybody calls me a Yankee!"

From all this stream of talk about college standards—sometimes sincere, sometimes narrow, often superficial—one or two things ought to be said in the interest of common sense, common honesty, and institutional responsibility.

All institutions that assume to teach—schools, colleges, professional schools, universities—must deal with intellectual and moral standards. These standards are sometimes objective tests, like entrance conditions, examinations for promotion, conferring

of degrees, and the like, but in the larger sense the standards with which teaching institutions deal are those ideals of scholarship and of human conduct which look toward the development of right thinking and of high character.

The setting up of objective standards lies wholly—or almost wholly—in the hands of school and college faculties. It is impossible to conduct schools and colleges without them. The question is how to establish and to administer such objective standards wisely, sympathetically, justly. In our country this is no easy matter. Our schools, just as our industrial and social forces, are in a state of flux. To be just to the secondary school, to be reasonable with the applicant for admission or promotion, to withstand the all-devouring thirst for numbers and yet not become formal or artificial, to preserve the needed elasticity and yet be honest and sincere, requires wisdom and good judgment. These larger problems rarely get serious consideration from members of the faculty—they are turned over generally to an overworked dean or registrar. Ten professors will write a treatise about academic freedom in the university where one gives a thought to the freedom of the secondary school.

Those standards of the mind and of the heart to which we refer as ideals are no less inevitably related to the work and to the spirit of teaching institutions. They go far to make the atmosphere which the college student breathes. And in the main that atmosphere in American colleges is wholesome, sometimes stimulating, in rare cases inspiring.

The thing which few trustees, professors, or college presidents appraise at full value is the fact that public opinion tests the ideals of a college by the fairness, the honesty, the large-mindedness with which it sets up and administers its objective standards. And this is right. It is hopeless to demand a higher appreciation of academic freedom in a university faculty which either completely ignores the secondary school or acts as if it had no rights which a college is bound to respect. It does not make for a higher conception of truth to print one set of entrance conditions in the catalogue and practise another. It does not breed in students a high type of idealism to preach about scholarship and intellectual sincerity and sacrifice both to numbers or to inter-collegiate athletics. It does not make for civic virtue to preach eloquently of university ideals of public service and at the same time to play politics with the legislature. In a word, the two kinds of standards—the objective ones which the college sets up for others and the ideals it professes for itself—are directly related in the public mind, and they are in fact related. The colleges are like all the rest of us—like all human organizations—we all stand in need not so much of theoretical idealism, with which we are well stocked, but we need a clearer conception of the relation of ideals to every-day standards. It is a part of my pleasure and profit to listen every year to many prayers in college chapels. Some day I hope to hear a prayer like this, "Give us human sympathy, common honesty, and the courage to be different from other colleges." This may not catalogue all the college needs, but its fulfilment would work a much needed revolution.

Into our complex and changing educational system there has been thrown in recent years a new factor, a new kind of institution, dealing with education and yet not a teaching body. These have back of them no organization of students or alumni, no constituencies. They have been created by private wealth, and for many years will incur a certain measure of distrust for that very reason. What their ultimate influence is to be, no one can yet say. Quite rightly they are objects of public scrutiny and criticism. Their usefulness will depend entirely on the large-mindedness and the sympathetic judgment with which they are conducted. They have possibly one virtue—that of detachment. A democracy finds varied instruments to do its work, and these educational foundations are just as truly the experiments of a democracy as is an endowed college or university. Like all other such agencies, they must account to public opinion. Any such institution which conceived of its function as the standardization of education would be guilty of folly too gross to be humanly possible. To scrutinize, to study, to report on educational conditions is as far as any of these foundations have sought to go. It is just possible that scrutiny and study and plain speaking may in the long run be of some value.

Meantime we must all live together somehow—secondary schools, colleges, universities, professional schools, and educational foundations. Doubtless we shall all get shaken down together in time. Meanwhile it will make the process better if this matter of standards can be talked of without either cant or self-deception.

As for the word “standardizers,” let us drop it from our educational discussions. Uniformity sometimes makes for freedom, sometimes not. But nobody in American education is in the standardizing business, and no educational trust is seeking to control education in the United States.

THE VERMONT REPORT

THE Report on Education in Vermont, published a year ago, contains the first study carried out thru the agency of the Division of Educational Enquiry. It was the first detailed and long-continued study that the Foundation had undertaken which aimed to deal with the educational instrumentalities of an entire state.

It will be recalled that while this study was made under the Foundation, the personnel of those engaged in the work was drawn from various sources, in the main, from the teaching staffs of Harvard, Columbia, and Wisconsin. It has been the policy of the trustees of the Carnegie Foundation not to build up with this endowment a bureau, but to bring into its service temporarily those believed to be best suited to deal with a particular problem, leaving them to return at the end of the work to their permanent stations.

The results aimed at in the report need not be repeated in detail. It recommended, briefly, the reorganization of the public school system of the state in such manner as to make the schools minister more directly to the problems of the communities in

which they are situated, whether in the cities or in the country. To effect this, a plan of organization was recommended under which the supervision of the public school system is to be entrusted to a small board, whose chief executive officer, a commissioner of education, shall be charged with the duty of studying and carrying out the details of right organization and right conduct of the schools. The plan contemplated an effort to develop along the natural lines of each community and town the opportunities for education which should be found by the local authorities, with the assistance of the commissioner, to be most helpful and most promising.

This report made by the Carnegie Foundation was addressed to the Vermont Educational Commission, a body made up of distinguished and able citizens, the chairman of the board being a judge of the supreme court of the state. This commission considered the report of the Foundation for a number of months, during which it carried on its own enquiries. In October, 1914, it presented to the people of the state of Vermont its own report. This report accepted the general recommendations made by the authors of the first report and provided for entering upon the practical steps to carry this reorganization into effect. This is arranged in a bill to be introduced in January before the legislature, which is intended to carry out the conclusions to which the Vermont Educational Commission has come. The bill represents the epitome of the combined efforts of the committee of experts and the judgment of the Educational Commission both upon their recommendations and the conditions as they themselves were able to ascertain them.

The purpose of the bill is indicated in its preamble, which reads: "An act to establish a public educational system, and to provide for its maintenance and control; to offer equal educational opportunity to all children whether resident in cities, villages or rural sections; and to equalize taxation for the support of schools." This bill first defines the public educational system of the state of Vermont; it then provides for its maintenance and control thru a State Board of Education. The bill includes an appropriation to be expended in the maintenance of a training school for agricultural teachers in the University of Vermont, and for a training school for secondary school teachers in Middlebury College, both to be expended under the state board.

The importance of this measure to the state of Vermont would be difficult to overstate. An attempt has here been made not to destroy or fetter local ambitions and local tendencies, but to provide the means by which they may have sympathetic assistance and the opportunity to develop in the most free and effective way their individual needs and aspirations. Above all, such an organization will be of advantage because it takes education in Vermont out of politics, and this action alone enormously increases the opportunity both for educational freedom and for educational sincerity. The measure aims not only to equalize educational opportunity, but also to make the opportunity for each community larger, more vital, and more practical. No measure which the legislature of Vermont has ever been called upon to consider has in it greater possibilities for good than are contained in this bill.

During the year which has elapsed since the report of the Foundation upon educational conditions in Vermont was submitted to the Vermont Commission and to the people of that state, it has received criticism from many quarters. This is entirely right. A study that undertakes to deal with interests so varied and so important ought to be subjected to sharp scrutiny and to searching criticism.

It is, I think, fair to say that the report has been highly commended by those familiar with educational problems in America. The general plan of organization, the endeavor to remove school interests from political interference, the entrusting of large powers to a commissioner of education and his assistants, the differentiation between the high schools, and the other details for the reorganization of the school system, have in general been accepted as sound by those who know public school problems. Even where criticism of some of these details was offered, no more practical suggestion has been brought forward as a substitute. Throughout Vermont itself and in the educational institutions of Vermont both the general plan and the details suggested for the organization of the public school system have met general approval.

Perhaps the one direction in which the recommendations of the Foundation have been most sharply criticized is in the matter of state subsidies to the three Vermont colleges. This also was to be expected. It is asking, perhaps, too much to expect that any college or any college community interested in a state subsidy should approve of its withdrawal. On such an issue one must not hope for an unbiased judgment from those immediately interested.

The reasons for this recommendation were so thoroughly set forth in the report that they need not be repeated. It was there shown how what had begun in the form of modest state aid had grown into a situation unfortunate alike from the standpoint of the state and of the colleges. It had led to a form of educational politics which ought not to continue under any circumstances.

It is not easy by any brief statement to convince those whose attention has been newly directed to this matter of the dangers which lie in state subventions to colleges. On *a priori* grounds there seems no reason why a state should not assist by a small appropriation a college confessedly doing useful work. The difficulty arises, as it arose in Vermont, not in the principle, but in the practical situation which soon develops once the state begins to subsidize colleges over which it exercises no control. Inevitably the temptation to obtain state funds spreads to all colleges. The way to get such funds is to appeal to local members of the legislature. It takes but a few years to develop a situation in which all the legislators of a given section unite to obtain a share of the public support for the college of their section. There is only one further step, and that ensues when the colleges come to a common agreement in which their friends act in concert and the way for indefinite lobbying and indefinite appropriations is prepared. This has been the history of every state which has entered upon such a policy. The moment a state begins to subsidize on the ground of philanthropy or education charitable institutions which are not state institutions, a path is

entered upon which leads in its full development to the subsidizing of every charitable agency which can muster the necessary political pull,— schools, colleges, hospitals, churches. The mixtures which occur under such a régime of politics and education, of politics and philanthropy, of politics and the church, are the most demoralizing which arise in a democracy. There is only one sure and consistent way to avoid such a consequence, and that is the adoption on the part of any commonwealth of the policy of appropriating money only to those charitable and educational agencies which the state finds necessary to maintain for the use of the state. Unless this line is drawn, there is no other at which a state can be sure of stopping.

THE AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS

A MOVEMENT extremely interesting and promising has been inaugurated by a meeting held in Baltimore for the formation of a national association of university professors. This preliminary meeting is to be followed by a larger gathering on January 1 and 2, 1915, in New York, which will probably provide for a permanent organization.

For some years university teachers have realized that specialization in teaching tended more and more to bring them together as specialists, not as university teachers. The physiologists, chemists, and philologists meet in groups, but nowhere has there been provided a body under which all university teachers shall come together, not as specialists but as university teachers, to consider the problems and the organization of higher education. Such a body ought to be able to promote in a helpful way the discussion of questions relating to higher education and to the organization and conduct of our universities; such, for example, as the organization of universities into departments, the relations of research to teaching, the awarding of degrees, the methods of appointment and promotion, the relations of faculties and trustees, and numerous other questions directly affecting the ideals and the needs of university teachers and affecting no less the progress and development of the universities themselves.

Such a body bringing together university teachers in all subjects, who meet not as specialists but as men engaged in teaching, ought to exercise an admirable influence in arousing in the minds of a large number of university teachers now absorbed in their own specialties an interest in university questions and a greater readiness to study such questions together. Too many university teachers are content to be absorbed in their own fields of study or research, and give little time or thought to the larger problems of university life and university progress. Such a body as this ought to furnish the opportunity and the incentive toward such thinking.

Such an organization of university teachers ought to accomplish much in the creation of what one might call professional consciousness. It will help toward a more definite appreciation on the part of teachers themselves, and on the part of the public,

of what it means to be a university teacher. The association may well hope in time to grow into an influence comparable in the case of university teachers to that exercised by the American Bar Association for lawyers or by the American Medical Association for physicians. These associations have done much not only to raise the character of those who enter the profession of law or who go into medicine, and to improve professional thinking, but they have also done much to create a professional consciousness. Hitherto there has been little of professional solidarity amongst university teachers. The term professor has had with us a very indefinite meaning. It has been applied unthinkingly to secondary school teachers, college teachers, university teachers, and to many whose connection with teaching is most remote. In this uncertainty lie certain difficulties which the association will meet, for in the public mind there is as yet no very clear differentiation between the university professor and the secondary school teacher, just as many of our universities are such in name only.

How far organization can further professional consciousness or professional solidarity is not yet clear. Many other factors enter, such as the relations of the profession to the state, the long development of the social attitude in the body politic. Thus lawyers and physicians have strong professional consciousness. It means to the members of these professions and to the public a fairly definite thing to be either a lawyer or a physician. But while both are quasi-public professions having well-defined relations to the state, their forms of organization are quite different.

The lawyers have what might be called a loose and flexible organization. There are state bar associations which combine in an annual meeting of the national bar association, but the relation between these groups is rather indefinite. Nowhere is there any machinery by which the united influence of the whole profession can be brought to bear either upon a public question or to stimulate political action. The medical profession, on the other hand, is a closely organized body under a program described as "A uniform plan of organization for state and county, making the county society the unit of organization and federating all state organizations into the national association in harmonious coöperation." County membership carries with it membership in the state society, but only delegates have the right to vote. The state societies in turn elect members to the national House of Delegates, the voting strength of which is limited to one hundred and fifty. The House of Delegates thus represents the delegated powers of the members of the American Medical Association. Since the association includes more than half of all the practising physicians in the country, it requires but a glance to see how powerful this organization may become and what a clear line of influence reaches from the House of Delegates to the most remote county society.

The plans of the Association of University Professors have not yet been worked out to the point of detailed organization. Doubtless those who have the matter in charge have in mind a somewhat loose organization like that of the lawyers rather than a highly detailed organization like that of the physicians. So far as the plan has as yet

developed, it contemplates nothing further than the formation of a body representative of university teachers, a body in which questions affecting the work of the university and the interests of teachers, the relations of schools and colleges, and similar questions, may be discussed from the standpoint of university teachers, and which may present to university bodies and to the public a statement of such questions from the standpoint of the profession itself. Those who have to do with universities and colleges, whether as trustees, presidents, or teachers, will welcome this movement heartily.

THE CLASSIFICATION OF MEDICAL SCHOOLS

THE desire to classify seems to be universal. In education, in politics, in society, men reach out for some form of classification that shall be definite and specific, so that every cause may have its right label, every party its true name, and every institution be included in its proper class.

Institutions as they develop become more complex, and hence more difficult to divide into classes. These difficulties increase as one seeks to take into account intellectual and moral qualities. For this reason it has been almost impossible to classify colleges. It would be easy enough, indeed, to separate colleges into groups according to some simple condition, for example, those having more than five hundred students, or more than a million dollars endowment, or those teaching Hebrew; but such groupings would have no significance. The moment one takes into account intellectual qualities and educational facilities, the groups fade into one another by imperceptible gradations so as to wipe out the lines of demarcation.

The classification of medical schools does not present quite the same difficulties. There are certain criteria that may be applied to them, or, indeed, to technical and professional schools of any sort, which are more definite and easier to appraise than in the case of colleges. Medicine is an applied science and an art besides. To know the science of medicine, the candidate must study anatomy, physiology, bacteriology, and other fundamental sciences.

Before one can offer any new suggestions, it is necessary to make some review of the work of the Council on Medical Education of the American Medical Association, for the Council has for some years been engaged in just this effort at classification. Moreover, it has achieved notable results in the elevation of medical education in the United States. It has done more than any other agency in weeding out unfit medical schools, encouraging full-time professors in the laboratory branches, in demanding bedside clinical teaching, and in insisting upon adequate laboratory and hospital facilities.

The Council has been able to do this not only on account of the intelligent work of its president and members, but also because it represented the medical profession in America. Over half the practitioners of the country are members of the local medical soci-

eties. These choose delegates to the state societies, and the latter in turn choose the national House of Delegates, a body of approximately one hundred and fifty. The Council on Medical Education is a committee of this body, and its action has thus the weight of the entire medical profession. Universities, colleges, and state boards have accepted the decisions of the Council as the expression of the thought of the leaders of the profession in America.

Under these conditions the reorganization of medical teaching has advanced very rapidly, and the classifications of the Council have now become sufficiently differentiated to make some examination of the present situation desirable to all interested in medicine and in medical education.

As a layman in medicine I venture to make such a review because the Council is primarily a council on education, not on medicine. It is in effect a national agency in education, and its work touches the secondary school, the college, and the university, no less directly than the medical school. It has dealt quite as much with the education which precedes the medical school as with that given in it. It is impossible, indeed, to legislate on medical education without becoming immediately involved in the entire educational problem. Education is, in fact, one thing, not detached fragments.

The legislation of the Council has been somewhat affected by a very natural tendency to conceive of its work from the standpoint of medical practice rather than from the standpoint of education. It has lacked to a certain degree close touch with the secondary schools, colleges, and universities.

Two very important decisions which directly affect secondary and college education seem to me to have arisen from this situation.

The Council has imposed as a condition of the recognition of medical schools as acceptable an entrance requirement of one year of college work, this year to include the study of three sciences and a modern language. Not only has the Council adopted this requirement as a teaching measure, but it has enforced it throughout the United States, without regard to the ability of the school and college system to meet it. Finally, it has consented to recognize pre-medical schools set up in the medical school itself to teach the three sciences and a modern language—it can all be done easily in one large room: chemistry in one corner, physics in another, biology in a third, and German in the fourth.

Let us examine these requirements (for when backed by the weight of the medical profession they become requirements, and both universities and state boards bow to them), and let us examine them from the standpoint of sound teaching, for this is the point of view from which they are to be approached.

With the purposes that the Council has in view every one who has to do with the practice and the teaching of medicine must be in accord. These purposes are, first, that the candidate for medicine shall be an educated man, his mind trained to think, his thinking having some real roots in a knowledge of books and of men; secondly, that

when he enters the medical school and takes up the professional study of medicine, he shall have grasped the elementary concepts of the sciences upon which medicine rests. He will not be a chemist, or a biologist, or a physicist; but he will have in mind the fundamentals of these sciences and their terminology, and this will mean a real saving of time. Of these two purposes the first is by far the more important. No other requirement that can be made for professional students compares in importance with the single condition that they shall be educated men in a real sense.

Does the requirement of one year of college spent in studying three sciences and one modern language make for such education?

I do not think so. That a boy may in one year gain a certain familiarity with the elements of three sciences may be assumed; but from the point of view of sound teaching, to begin three sciences in one year is unjustifiable. It is a cramming process, not education. A youth is better off to have more education and less cramming. He will grow into a better educated man and a higher type of physician if he begins his college year with a single science (let us say, chemistry) and devotes more time to general studies. In short, it is quite evident that what the Council has in mind—education and elementary scientific training—is a program which cannot, from the standpoint of teaching, be carried out seriously and fruitfully in less than two years. The present requirement can be regarded at best as but a step toward that goal.

Further, no requirement for admission to a given medical school can be made without reference to the educational possibilities of the region thereabout. The conception from which we start is that the medical school is a professional school, that the youth enters it with a mind already trained to think, and with certain fundamental scientific knowledge. Only under this conception will our schools ever become intelligently related to one another, and only under this conception can the medical school realize its mission as a professional training school resting securely upon the general educational system. In the southern states the medical schools had not got on a four-year high school basis when they were faced with this new requirement. The four-year high school is just getting established in most southern states. Even in cities like Nashville and New Orleans the public high school has not yet graduated its first four-year class. To enforce honestly a four-year high school requirement would call for great firmness and self-denial on the part of the medical schools; but to require on top of this a year of college including the sciences and a modern language is to inaugurate anew a régime of compromises and makeshifts, and to substitute an imitation of education for the genuine thing. Finally, this action will be a source of discouragement to the development of good high schools.

Augusta, Atlanta, Nashville, Mobile, Memphis, and Louisville went on this basis in September. The Augusta school, realizing that it would be closed by a compliance with the conditions, got a dispensation from the Council and was able to admit eleven to its entering class, none of whom met the conditions. Atlanta, with a similar dispensation, admitted thirty-one, none of whom met the requirements; Memphis, eleven,

four of whom met the requirements; Vanderbilt, thirty-one, of whom not more than six could be considered as meeting the conditions; Louisville, eleven, of whom two met the conditions; and Mobile, nine, of whom eight met the requirements.

On the other hand, Tulane and Texas, which have now been for four years on this basis, were able to show, in a way, a successful enforcement of the requirement. Of the sixty-four freshmen at Tulane, two-thirds offered the required pre-medical subjects, mostly covered in a single year; nearly all were high school graduates, but there was usually no record of the years they had spent in high school. Often, however, the pre-medical work had been done in inferior institutions, or was a patchwork made up from summer session, dental, pharmacy, or veterinary courses, or from agricultural, commercial, industrial, or technical institutions. Even at the University of Texas school, where more than half of the fifty-five freshmen had two or more years of work in good colleges, less than half offered all of the pre-medical subjects and less than half had spent four years in high school.

In a word, compliance with the requirement has been reached generally thru conditions entirely artificial and unfavorable to the orderly and thorough development of the candidate's education. Thru various adaptations of this sort the medical candidate learns after a few years to present himself with a nominal compliance with the conditions, obtained partly in one school and partly in another, and capped by a feverish struggle with the three sciences and a modern language.

Are these candidates educated men? Is the attainment which they represent equal to that offered by a well-conducted four-year high school with good physical and chemical laboratories? I do not believe so. And the testimony I get from the teachers in these medical schools goes to show that the quality of candidate is not materially improved over that of the high school graduate they were teaching before. Meantime, a blow is struck at the public high school. County authorities argue that if medical candidates have to go to college to get their physics and chemistry, there is no need of providing high schools to teach these subjects. It would, I believe, have been wiser to go a little more slowly in the south, to get honestly on a high school basis first, and to live there a few years until the two years of college could be fairly required. Some adjustment of this situation ought still, in my judgment, to be made in the interest both of education and of medical training. No program will be real which does not rest on sincere and reasonable requirements. The progress made in raising standards, tho attractive on paper, will be likely to prove in part illusory.

For the setting up of pre-medical schools apart from the colleges and universities, such, for example, as those at Atlanta and Memphis, the Council is not primarily responsible; but it ought vigorously to discourage them. No educational justification for them exists. The very purpose of the new requirement was to make the medical school a professional school and to require the candidate to get these preliminary subjects before entering it. And now the medical school is teaching physics and German! To be consistent, it should take one other step and conduct a secondary school as well.

The machinery would then be complete for getting a student into the medical school with the minimum of education and the maximum of speed.

The purpose of these parasites is, of course, plain. Their object is to get students. One finds it more difficult to excuse this proceeding in a university. Thus, the University of Tennessee offers in its own laboratories at Knoxville the facilities for pre-medical education under normal conditions. That it should set up outside its walls in its medical school at Memphis a second school for giving the pre-medical sciences plus German seems hard to justify. The reasons appear political rather than educational.

A new argument has been put forward to justify these extra-mural schools. It is seriously argued that the student needs to study not merely chemistry but medical chemistry, which he gets only when the chemistry is taught in a medical school. Doubtless the physics, the biology, and the German are also medical. It is scarcely necessary to point out the hollowness of this claim. In teaching elementary chemistry there is no difference between medical chemistry and any other chemistry. Any teacher may introduce illustrations from the chemical reactions that go on in the human body.

The crux of the situation is this: The medical school is a professional school. For the underlying preliminary education it must depend on the general educational system of the country,—the secondary schools, colleges, and universities. If this pre-medical education is deficient, the remedy is not to be found in having the medical schools take over the work of general education, but in demanding that the secondary schools and colleges do their work well and send up to the medical school well-prepared men. Any medical school which has the honesty and the courage to send back to the college the applicant who cannot write correct English, who cannot solve simple problems in arithmetic, who having studied chemistry does not know the ordinary chemical concepts, will do more for the cause of pre-medical education than all the pre-medical departments the medical schools can set up. Nothing can be more certain than this. The way to secure well-educated and soundly trained candidates for the medical school is to stir up the secondary schools and the colleges to do their work thoroughly, not to take this work off their shoulders.

Let us come now to the actual classification of medical schools as carried out by the Council.

To classify medical colleges, certain criteria must be assumed. The Council grades medical schools upon a scale of 1000, using ten criteria, each having a weight of 100.

The criteria which the Council has chosen are the following:

1. Showing of graduates before state boards and other evidences of the training received.
2. Enforcement of a satisfactory preliminary educational requirement, granting of advanced standing, and the character of records.
3. Character of curriculum, grading of course, length of session, time allowed for matriculation and supervision.

4. Medical school buildings; light, heat, ventilation, cleanliness.
5. Laboratory facilities and instruction.
6. Dispensary facilities and instruction.
7. Hospital facilities and instruction, maternity work, autopsies, specialties.
8. Faculty, number and quality of trained teachers, full-time instructors, and assistants, especially of the laboratory branches, organization, and extent of research work.
9. Extent to which the school is conducted for properly teaching the science of medicine rather than for the profit of the faculty directly or indirectly.
10. Possession and use made of libraries, museums, charts, stereopticons, etc.

In order to make use of definite objective criteria in estimating a medical school, these tests must have two qualities:

1. They must constitute true tests of the merits of the school.
2. They must be capable of practical application in the hands of competent judges.

It seems to me that these ten criteria leave much to be desired both in respect to significance and practicability. Nor can they be considered comparable one with another in importance.

The showing of graduates before state boards, for example, is a test easily and definitely applied, but it is one that will vary with each state, and with the character and strictness of the examinations. Nor can it be compared in importance with good laboratories and good hospital facilities. It is a fact that in some states a candidate could, by a good use of cram-books provided by a diligent faculty, pass with flying colors thru the state board examinations, altho he would be helpless in the presence of a patient.

A very interesting proposition was once made to the Carnegie Foundation by a young college man out of a job, who offered for a certain money consideration to pass with credit the state board examination in a given state without ever attending a clinic or knowing anything about medical practice. The proposition was not accepted, but it had interesting possibilities.

Criterion 2, as adopted by the Council, is definite, fundamental, and capable of practical application. It says in effect that one test of a medical school is the qualifications of the candidates it accepts. The practical proof of this is a reasonable entrance requirement, honestly and sincerely enforced. To ascertain the validity of this test, however, it is necessary to carry out an inspection of these entrance requirements and their enforcement by men thoroughly familiar with the work of colleges and high schools.

Similar difficulties are evident in other criteria, such, for example, as number 9, which undertakes to estimate the percentage of commercial spirit in the medical school. Such a criterion is in the first place incapable of practical application. To mark a school fifty per cent commercial and then average this up with other higher

percentages would seem a sort of *reductio ad absurdum*. Such a school has no place among good schools at all. Criterion 10 relating to the use of libraries is somewhat indefinite. This has its use in stimulating the acquirement of a good working library, altho it may be doubted whether a library acquired under such pressure would be used. In any case it would be better to make the possession of a library a mark of good standing rather than to make its presence count in the same proportion as the possession of a competent faculty.

In general it may be fairly said that these criteria are too many, are not comparable one with another, and are not in all cases capable of practical application.

It is also fair to say that the application of such objective tests as these would require a staff of several experts. This would doubtless be true of any tests which could be devised. Thus the man who passes on entrance requirements ought to be an expert in education. He should know colleges and schools as only a teacher can know them. But such a man is quite unlikely to be qualified to pass on the pathological laboratory. Similarly the expert who can pass upon the laboratory might be quite unable to estimate the quality of the clinical teaching.

In applying these criteria to the grading of medical schools it is not possible to leave out of account one difficulty inseparable from the very organization of the Council. This lies in the situation which arises when a body of men undertake to grade themselves. Not only are all the members of the Council connected with one medical school or another, but a large proportion of the House of Delegates are also representatives of medical schools. Men would be more than human if under such conditions they could entirely separate their duties as judges from their loyalty as members of various faculties. I have seldom met a teacher in a college, or a medical school, or a university who did not convince himself that his school had that about it which made it the equal if not the superior of any other. The teacher in the weakest medical school somehow persuades himself that the students are better off in his school than elsewhere. This quality in human nature is admirable, but it goes far to disqualify its possessor as an impartial judge of his own medical school. The reflection of this universal human quality may be observed in the existing classifications.

Let us now turn to the results of the classification of the Council.

When it began its work there were some one hundred and sixty schools; to-day there are approximately one hundred and nine, and this result speaks volumes for the work of the Council, whether one agrees with all its decisions or not. No better service than this has been done by any group of men laboring for the cause of education.

The third classification, revised to June 21, 1914, divides the one hundred and nine medical schools then existing in the United States into four classes. According to this grouping there are twenty-nine first-class schools, thirty-eight second-class, twenty-two third-class, and twenty fourth-class schools. One acquainted with these schools has only to examine these classes, or, more properly speaking, these groups, in order to perceive that this classification has now become almost meaningless. For example, the first

class, or group, includes not only the strong medical schools with large endowment, complete clinical facilities, and research departments, like those of Harvard, Johns Hopkins, Columbia, Cornell, Washington University, and others, but it takes in also institutions like Vanderbilt, Tulane, and Texas, whose standards and facilities are of an entirely different order. To place these latter schools in the same class with the strongest in the country, and perhaps the strongest schools of the world, is good-natured prophecy, not educational justice.

But this is not all. Class "A Plus" has been stretched to include schools of the type of the College of Medicine at Omaha and the Starling-Ohio School at Columbus, since known as the School of Medicine of the Ohio State University. To group these schools in the same class as Harvard, Johns Hopkins, and Washington University is to wipe out real distinctions.

The second class of schools, those grouped under class "A," show similar discrepancies. It would be difficult to defend upon educational or medical grounds the wide variety of schools included under this group. Some of them are promising efforts under university direction, reaching toward good ideals and sound support. A considerable proportion are schools whose university connection is nominal, and which live entirely upon the fees of students. To raise the standard of the entrance requirements, as the Council has done, makes it impossible for any medical school to live from fees and do sincere medical teaching. One cannot go thru this list without realizing that however honestly and carefully it has been made, it contains an incongruous assortment of institutions that have no particular reason for being grouped into a class by themselves. One recognizes further that between the poorest third of the first class and the best third of the second class there is no appreciable difference. Finally, it is clear that a strong current exists which will ultimately tend to carry all these schools into the class "A Plus."¹

The succeeding classes (B and C) show similar incongruities. The schools differ from one another by imperceptible gradations, and their differentiation into distinct classes rests upon distinctions which become every day more insecure. It shocks our sense of proportion to have Johns Hopkins classified with the Starling-Ohio, since become the colleague of a second school—a school of sectarian medicine—taken over by the same university. To class together such widely separated schools is likely to do harm rather than good. Some more permanent means of classification must be found, if classification is to endure.

Can medical schools, any more than colleges, be classified into sharply divided classes? This question lies at the root of the whole matter.

In reply I would say that in my judgment no one is so well prepared to carry out such a work as a body which represents the medical profession. Reform in medical teaching, like all reform that is genuine, will come from within, not from without.

¹ By action taken February 17, 1915, Class A and Class A Plus were merged, so that both groups are now of the first class.

No other group of men, in my judgment, could hope to do what the Council on Medical Education has accomplished. I believe, as I have already said, that the Council has suffered in its work by a lack of touch with the educational conditions with which it has been dealing, and by the relations of members of the Council and of the House of Delegates to the schools. It can, I am sure, improve its future legislation by availing itself of a closer knowledge of schools and colleges; but I question whether any group of men, however qualified, can make a hard-and-fast classification of medical schools which would not be open to serious criticism. In other words, the problem of classifying schools into four or five groups upon such criteria as the Council has assumed seems to me practically insoluble. It has served its day, and some looser form of grouping seems now desirable.

In order to make an improvement in the present classification, one must go back to the criteria adopted for estimating a medical school. There are certain things about a medical school that are fundamental, and yet definite and specific, and that may fairly be appraised by those who have the necessary knowledge and experience and who take the necessary time. The feasibility of any fruitful classification rests absolutely upon having criteria that shall be at once significant and capable of application. These are few in number. They seem to me to be embraced under the following heads:

1. The first test of any school, whether it be a school for general education or for a profession, is the quality of material that it accepts; or, to put it in another way, the state of preparation at which it admits its students.

An entrance requirement reasonable and fair to the school system, and honestly enforced, is one definite criterion for the judgment of any teaching institution. This criterion, however, is of value only when it is administered by men familiar with the school systems and the colleges.

2. It is not enough to receive into a medical school well-prepared candidates. Experience has shown that students received at the high school level develop into better practitioners of medicine than those who enter with a more advanced education, but who have been taught by teachers who are either incompetent or who have given only the fag-ends of their time from practice. In other words, the quality of the teaching, the ability and devotion of the faculty, must be taken into account in estimating the fitness of a school of medicine for training physicians.

Furthermore, let us not forget in our zeal for research that the principal function of the medical school is the training of medical practitioners. To sacrifice their interests to the preparation of a few men for research is not to be thought of. Both ends can be attained by the use of a wise discretion.

These practitioners of the future enter the medical school as youths of twenty to twenty-three. Their value to the body politic as physicians will depend as much on the character of their teachers as on their skill. I venture to say that every successful physician, as he looks back toward the reasons for his success, will recall one or two of his medical teachers who helped him into the right path fully as much by their

human and moral qualities as by their professional skill. The value of a physician to any community is just about equal to his medical skill multiplied into his moral character. Therefore above buildings, above state examinations, above even laboratories and hospitals, I would place the character and the ability of the faculty, including the clinical professors, for they furnish the ideals of the young practitioner. It is the character of the teachers that determines whether the medical student fits himself for the business of medicine or the profession of medicine.

For another reason it seems to me desirable at this time to lay stress upon the matter of teaching. The student loses time both in high school and college by reason of lack of teaching skill on the part of his teachers, but there is no other teaching institution where the art of teaching is so little considered as in the medical school. A man is chosen because he is a good pathologist, a skilful anatomist, or a well-known surgeon, but the question whether he can teach is seldom raised, nor is there any provision in the medical school for the improvement of the teaching or for the elimination of ineffective teachers. The good teacher comes by accident. Nowhere is there a greater chance to save time for the medical student than by improving the teaching in the medical school itself.

These two criteria—the basis of selection of the student body and the basis of selection of the teaching body—to my thinking outweigh all other considerations.

It is true that this last estimate involves a wide exercise of personal judgment. To determine what constitutes a good teacher is one of the most difficult tasks. Nevertheless, the quality of the teaching is a fundamental fact in the school that cannot be escaped. Some judgment of it must be attempted, if any estimate of the school is to be made.

In my opinion it is far sounder educationally to place large weight upon the quality of the teaching rather than upon a specified curriculum. After all, we do not wish to make these medical schools absolutely alike. A certain elasticity of institutional development should be left. Courses of study will under any circumstances follow a general plan. Too sharp insistence upon the details of the courses would seem to make against that educational freedom which is so desirable.

Besides these two criteria whose determination involves the evaluation of certain educational and moral qualities I would add three others which are definite, precise, and which admit of accurate application.

3. The completeness and availability of the scientific laboratories in chemistry, anatomy, physiology, pathology, and associated sciences form a definite and practical criterion for estimating the value of a medical school.

4. Similarly, the character of the clinical facilities, including both hospital and dispensary and the use which is made of them, offers a concrete and a usable test of the character of the school.

5. These four qualities of a good school—soundly administered entrance requirements, an able and devoted faculty, complete scientific laboratories, modern clinical

facilities both in the hospital and the dispensary—can be obtained only by the expenditure of money. Below a certain minimum of expense it cannot be honestly done. A school that pretends to do these things with a wholly inadequate income stands self-revealed. To provide them from the fees of students, under the conditions now accepted by medical schools, is impossible. In other words, a concise, detailed statement of the receipts and expenditures of a medical school throws a great light upon the relation of its professions to its performance. It affords the most practical means of showing how far performance keeps pace with promise. A prospective medical student who knew how much money was spent upon the departments of pathology, internal medicine, or obstetrics, would get a better insight as to whether the medical school could carry out the promises of its catalogue than he could get from any other source. If he knew that the department of pathology was run on \$1800 a year,—including the salary of the professor,—he would know more about what sort of education he was likely to receive than could be gleaned from whole pages in the catalogues.

Perhaps there is no other one thing in which the medical schools, and particularly those which are on the border-line, are more sensitive than over an invitation to make an exhibit of their finances. The request to furnish this generally brings forth an eloquent oration on the thesis that the work of a medical school must not be measured by the money put into it, that no one can reckon in dollars the devotion of the medical practitioners of the country, and that to place their service on a commercial basis is an insult to the profession. No one would depreciate for a moment the devotion and self-sacrifice that American physicians and surgeons have put into medical schools. No one who knows anything about the subject, however, will fail to recognize that their presence on a medical faculty is in many cases a matter of business as well as of devotion. Any man who knows what the transformation of our medical schools means understands that the modern medical school cannot be maintained on the kind of teaching that sufficed for the medical school of ten or fifteen years ago. The time is here when the clinical professor must give not a mere fraction of his time to the medical school and the hospital, but this must constitute his primary work, to which his practice is secondary. Under these circumstances the medical school that professes to give a modern education with a totally inadequate income is offering to the student something that it cannot furnish; and the prospective student has a right to this sort of information.

I repeat, therefore, that an honest detailed statement of the receipts and expenditures of a medical school forms one of the sure and just tests for judging the work of the school and the relation of its promise to its performance. Most medical schools prefer to be virtuous when they can afford it.

Assuming that these criteria are reasonable and practical, do they form a means for accurate classification? In other words, can some grouping of existing medical schools be made upon these criteria that will be educationally just, which would be helpful in the development of the schools themselves, and for medical education? For,

after all, it is this last consideration that ought to govern our judgment. No classification is worth while unless it makes in the end for the betterment of medical education. And those who have watched the classifying process have been aware of a disquieting tendency among the medical schools to get into Class A or Class A Plus without much regard as to whether they were better places for education or not. A hard-and-fast differentiation into four or five distinct classes is, I believe, almost impossible and its ultimate effect doubtful.

From such consideration as I have given the matter, I am inclined to think that one in the possession of the information called for under these five heads could make some such grouping as the following:

There is a group of institutions of the highest class which in respect to all these tests stand by themselves. They constitute a group apart, and include those institutions of large resources and endowment, of high standards of administration, and of large clinical facilities, which are clearly able to offer the best modern education. No two persons qualified to judge will differ greatly concerning them.

It would also be feasible to designate a list at the bottom, made up of the medical schools that are weak in clinical facilities or faculty, that are involved in commercial medicine, that live in some cases by flagrant evasion of reasonable standards, and that for one or another of these reasons ought not to be recommended to students. This group of institutions should be omitted altogether from any list to be recognized by the American Medical Association. To a certain extent a school considers itself recommended to the public even when it appears in Class C.

There would then remain a group of medical schools secondary to the strong and well-endowed schools, but able nevertheless to give a fair medical education along modern lines. They are the places to which a student would go knowing he might not get the best opportunities which the country afforded, but that he was receiving a decent modern education in medicine. Such a group would undoubtedly contain institutions of a considerable variety of excellence, but great light would be thrown upon their relative standing by a publication of the details upon which the grouping was effected. Promotion should be made only when it had been clearly attained, and the basis upon which it was accorded should be made public. In all these matters publicity is wholesome alike for the medical school and for the agency which seeks to appraise it in comparison with others. The indefiniteness of the Council's descriptions of these classes has been one great source of difficulty. To call a group of schools "satisfactory" is no longer enough. The grounds of the decision ought also to be made known. This means carefully chosen criteria, a body of three or four experts (not necessarily employed all the time, but in thorough coöperation), examinations of a detailed and careful nature, and finally full publicity. I hope the Council which has so brilliantly carried on the work of the past ten years may have the means to undertake this sort of examination.

Let me say one word in conclusion in regard to such criticism as I have made of the

Council on Medical Education. I have spoken concerning the work of the Council with great frankness for the reason that no other course is worth following, and in the belief that progress comes only by the frank and honest expression of opinion concerning such matters. I have high regard for the work of the Council, and for that of its chairman, and I take a keen interest in the preservation and development of the Council's work,—a work which seems to me likely to fall from its own weight if the classification proceeds along the present lines. I hope, as a layman in medicine, that it is not impertinent of me to discuss these matters, since they are primarily questions of education; and I trust also that it may be admitted that the sincerest service a friend can perform with respect to the work of the Council is to speak in a critical and yet in a friendly way, concerning those directions in which, it seems to him, the dangers lie. Only that progress will be permanent which is based on sound and sincere educational grounds. Statistics based on any other ground are sure to be disappointing. The interests of education in our nation are one. Education itself is one thing, from elementary school to university; and medical education in its largest and truest sense can be approached wisely only when one keeps this fact in view and regards medical education in its true perspective as a part of the whole problem of education of the American nation.

MEDICAL EDUCATION ON THE PACIFIC COAST

THE Pacific Coast states—commonly called the Coast—occupy a most interesting place in the nation. Differentiated from the older states by the matter of distance, having resources and climatic conditions of an extraordinary quality, they have enjoyed a remarkable progress not only in wealth, but also in the development of education. Universities and school systems have arisen representing the best ideals of American civilization.

In the matter of medical education the three coast states illustrate the variations of the entire Union. Washington is one of twelve states having no medical school within its borders. Oregon has one school, at Portland. California has all the varieties from modern schools of high grade, like those maintained by the University of California and Leland Stanford University, mediocre schools, like the College of Physicians and Surgeons at Los Angeles, to, finally, hopelessly defective ones, such as the College of Physicians and Surgeons at San Francisco, and the College of Medical Evangelists at Loma Linda. A brief review of this situation, existing as it does in the most recently developed states of the Union, may be of value.

STATE OF WASHINGTON

The state of Washington, the most northwestern of our states, with a population of a little more than a million, has three cities which, under the conditions that generally exist, would be ambitious to develop medical schools. One of these cities, Seattle, has a population of more than three hundred thousand. It offers abundant clinical material, and is furthermore the seat of the state university. The absence of a medical school is therefore the more remarkable. This is not to be explained on the ground that the University of Washington lacks those institutional ambitions that have impelled most state universities to establish medical schools whether they could sustain them or not. The state university has on several occasions been anxious to inaugurate a medical school. It has been restrained from this enterprise by the action of the Medical Association of the city and by the medical men of the state, who have insisted that no weak, half-commercial medical school shall be established; that the state university shall embark upon medical education only when the state is ready to support medicine upon a sound teaching basis. This admirable action of the medical men in the state of Washington will in due course undoubtedly result in the establishment upon a sound basis, under the University of Washington, of a modern medical school.

One of the most specious claims put forward to justify the existence of the weak medical school is the argument that it furnishes the only source of supply for rural doctors. It is worth noting that the state of Washington with no medical school within its boundaries is amply supplied with physicians, and, furthermore, that these physicians have come in considerable numbers from the strong and well-equipped medi-

cal schools. It is for this reason that the Medical Association of Seattle was able to prevent the inauguration of the commercial medical school. With a population of 1,141,990 (1910), the state of Washington has 1644 physicians, or one physician for every seven hundred inhabitants. Washington has nearly three times as many doctors for each thousand of population as Germany. This supply of physicians by immigration is characteristic of all three states. If there were no medical schools in any of them, the entire coast would be oversupplied with physicians by immigration alone, so great has been the output by the eastern medical schools.

The source of this immigration is of immediate concern to the inhabitants of the state. Few men, at least few Americans, give any serious consideration to the question whether the physicians they employ come from well-equipped and reputable medical schools, or whether their degrees were obtained upon a minimum of attainment in some weak establishment lacking practical hospital and bedside instruction. What were the medical sources of Washington practitioners? The answer is given in the following table:

DISTRIBUTION OF PHYSICIANS IN THE STATE OF WASHINGTON ACCORDING TO THE
SOURCE OF THEIR MEDICAL PREPARATION

Illinois	338	Massachusetts	43	Georgia	8
Missouri	128	Maryland	41	Wisconsin	7
Pennsylvania	128	Colorado	37	Connecticut	4
Michigan	110	Foreign	28	New Hampshire	4
Oregon	89	Tennessee	27	Texas	4
Ohio	88	Quebec	27	Manitoba	3
Minnesota	84	District of Columbia	24	South Carolina	3
New York	81	Indiana	18	Louisiana	2
Iowa	63	Virginia	11	Washington	2
Ontario	56	Vermont	10	Alabama	1
California	55	Kansas	8	Arkansas	1
Kentucky	55	Maine	8	Oklahoma	1

1597

This exhibit reflects in the first place the influence of the great medical centres—Chicago, St. Louis, Philadelphia, Ann Arbor, Cincinnati, Minneapolis, New York, Toronto, Louisville, Boston, and Baltimore, with the natural effect to be expected from distance. The tremendous stream of practitioners poured out under the conditions which existed from 1875 to 1900 in schools like those of Chicago, Cincinnati, and Louisville is appreciated when one looks at such a list. The attendance on the Louisville schools alone was at its maximum about one thousand medical students.

The most interesting feature of this migration, and the one most vital to the inhabitants of Washington, relates to the character of the medical schools from which these physicians come. Approximately one-half of these practitioners are drawn from what might be fairly termed the stronger and better medical schools. This is an unusually large proportion, for in the past quarter-century the commercial medical schools

far outnumbered the schools of better type. Even at the present time the American Medical Association places only about thirty per cent of the schools of medicine in its first class. On the whole, the medical migration to Washington seems to have been far better than the average.

Taking the present classification of medical colleges of the American Medical Association, of the 1621 practitioners whose records are given, 887 came from medical schools in classes A Plus and A. To these must be added 50 more from strong Canadian medical schools and 28 from foreign schools. From schools now placed in the B class came 72 physicians and 45 from the C class. The remainder, to the number of about 539, came from institutions which have been merged or have fortunately in the last ten years ceased to exist thru the reforms in medical teaching which made the purely commercial school unremunerative. Nevertheless, the product of such schools will constitute for many years to come a large proportion of medical practitioners. An analysis of the data makes clear the fact that a state reaps a very undesirable harvest from a weak medical school near its own borders as well as from the worst schools of Chicago and New York.

Very significant is the distribution in Seattle, which in 1914, with a population estimated at about 300,000, supported 463 medical practitioners. The striking feature here is the preponderating number of physicians from the A Plus and A colleges and strong institutions outside this country, the total being 302. Of the remainder 29 were from colleges of Class B, 7 from Class C, and 125 from institutions merged or defunct. This distribution well illustrates the attractive powers of the large city for both the well-equipped and the poorly trained practitioner.

OREGON

Turning to the state of Oregon, one finds a notable improvement in medical education since the report of the Carnegie Foundation issued five years ago. At that time there were two weak schools in the state: one at Portland, nominally a department of the University of Oregon, with an income from fees of approximately eight thousand dollars, and the other at Salem, nominally a department of Willamette University, with an income of less than half that amount. The authorities of Willamette University have wisely given up the attempt to teach medicine, and there remains today the single school of medicine at Portland. This is the School of Medicine of the University of Oregon; and altho the university connection is of that tenuous sort which is almost sure to exist where the medical school is in one city and the university in another, nevertheless, great improvement in the school of medicine at Portland has taken place. The state now makes an annual appropriation for it of \$22,500, and this with the fees gives an annual income of approximately \$34,000. There are full-time teachers of anatomy, physiology, physiological chemistry, pathology, bacteriology, and pharmacology.

The school is in the process of transition from the practitioner's school to the university medical school. The medical building is still owned by the faculty and rented to the university, but the funds are handled thru the university. This building is wholly inadequate, and the next legislature is to be asked for a sufficient appropriation to erect a medical school building on a new campus. The city of Portland is urged also to build the new city hospital on the same site. Should these plans be carried out, the situation will be still further improved.

While this school is placed by the Council on Medical Education in Class A, which is described as "acceptable," its work is still greatly limited by the fact that it has a meagre income and inadequate buildings and hospital facilities. The classification of such a school as "acceptable" is an expression of good-natured prophecy rather than an appraisal of present achievement.

The problem in Oregon, so far as medicine is concerned, can be stated in some such terms as follow: The state is one of great area, covering some 95,000 square miles, with a population in 1910 of 672,765. Two-thirds of this population reside in Willamette Valley, and of these 207,000¹ reside in the city of Portland. To support a medical school of the modern type will require the expenditure of large sums of money for buildings, laboratories, and hospitals. An income of \$100,000 a year will be somewhere near the minimum expenditure upon which such a school can be conducted. Without placing clinical teachers upon full salaries, it will nevertheless be necessary for any such school to command the primary work and devotion of a certain number of medical and surgical teachers. A university hospital in addition to the city hospital will be necessary. Those who are responsible for the finances of the state should be told frankly the financial burden which they must expect to assume.

The day has gone by when the clinical teaching of a medical school can be satisfactorily carried out by busy practitioners giving only the remnants of their time, however devoted such men may be. Any university school of medicine must expect to reach within the next few years a plane upon which the clinical teachers will have as their primary work that of the medical school and the university hospital, while their practice will be confined to the hospital. The school at Portland has made a good start toward this ideal. The people of the state should, however, know what the ultimate goal is to be, and its cost.

An examination of the educational sources from which the Oregon doctors are drawn shows some interesting contrasts with Washington, due in the main to the fact that Oregon was the seat for many years of two weak medical schools. Happily one of these is now deceased and the other, as has already been noted, has enormously improved.

With its population of 672,765 in 1910 Oregon includes within its borders 1108 physicians, of whom 469 are ministering to the inhabitants of Portland. When the question of the establishment of a medical school at the University of Virginia was

¹ Population in 1910; the estimated population for January 1, 1915, was 277,000.

first discussed, Thomas Jefferson argued that the right seat of a medical school was at some unhealthy place, not at a spot like Charlottesville. Fortunately the medical population of Portland does not reflect any such unhealthy situation. The presence of 469 doctors in a population of some 277,000 is mainly the result of the activities of two medical schools which until recently dispensed the degree of doctor of medicine upon very easy terms. Just how the 469 practitioners of Portland make a living from the 277,000 inhabitants is an enquiry of an economic rather than an educational nature. It is clear, however, that Oregon, and particularly Portland, is one of the most be-documented regions of the earth. If the medical school of Portland did not graduate an M.D. for the next decade, the medical practice in Oregon would still be vastly overcrowded.

The states from which 1108 Oregon physicians were drawn are shown herewith:

DISTRIBUTION OF PHYSICIANS IN OREGON ACCORDING TO THE SOURCE OF THEIR
MEDICAL PREPARATION

	<i>Total</i>	<i>Oregon, exclud- ing Portland</i>	<i>Portland</i>
Oregon	335	178	157
Illinois	171	97	74
Pennsylvania	80	38	42
Missouri	67	46	21
Ohio	54	28	26
Michigan	46	30	16
New York	42	21	21
California	39	22	17
Kentucky	37	27	10
Iowa	36	28	8
Maryland	28	15	13
Massachusetts	22	8	14
Tennessee	20	15	5
Ontario	18	10	8
Minnesota	18	11	7
Foreign	14	14	...
Colorado	12	6	6
Indiana	10	6	4
Nebraska	9	8	1
District of Columbia	9	7	2
Virginia	9	1	8
Quebec	8	5	3
Louisiana	5	5	...
Vermont	4	2	2
Kansas	3	3	...
Texas	2	1	1
Alabama	2	2	...
Arkansas	2	1	1
Manitoba	2	2	...
Georgia	1	1	...
North Carolina	1	1	...
New Hampshire	1	...	1
Maine	1	...	1
	<u>1,108</u>	<u>639</u>	<u>469</u>

The most evident point of contrast with Washington is to be found in the fact that 335 (about thirty per cent) of the Oregon doctors are home grown (143 from the Salem school and 192 from the Portland school). Apart from this fact the statistics of immigration are similar to those of Washington. The great contributors in Washington are the medical schools of Chicago, St. Louis, Philadelphia, Ann Arbor, Cincinnati, New York, and Toronto. Similarly, in Oregon after the great contributors, the local schools, are Chicago, Philadelphia, St. Louis, Cincinnati, Ann Arbor, and New York. The following analysis will afford a further basis of comparison. Of the 1108 physicians of the state 645 were trained in colleges now classified as A Plus and A, or in strong foreign colleges. The large majority of the remainder, 383, received their training in institutions no longer in existence, while only 45 came from institutions of the B class and 35 from those in Class C.

The significant fact is that of the total number of physicians in practice in Oregon a much smaller proportion (about thirty per cent) come from strong and well-established schools. In other words, the presence in the state of Oregon of two weak schools has been unquestionably to the disadvantage of the medical profession. Washington, without any such school, has drawn a larger proportion of its practitioners from the strong schools. This deduction is not to be pushed too far. The two states are not entirely comparable in population. Washington has several cities of considerable size which have attracted men from the good schools. But taking all such considerations into account, it seems clear that the state of Washington in the past has been distinctly better off without a medical school than Oregon with its two weak schools. Certainly the position of the medical profession in Seattle—better no school than a weak one—has been abundantly sustained by the experience of these two states. It remains now for the state of Oregon, with the results of this experience before it, and taking into account the overcrowding of practitioners now existing, a situation which will last for many years, to maintain a school upon a sound and generous basis or else to maintain no school at all. So far as the people are concerned, there will always be accessible throughout the state physicians educated in the strongest and best medical schools of the country.

While our medical schools are still turning out more young practitioners than the country can absorb, this stream is fortunately diminishing. Five years ago there were 161 medical schools in the United States, about as many as in all the rest of the world. Fifty-two of these have disappeared, and it is to be hoped that others will soon follow. The day of the purely commercial medical school seems nearly over. Such as remain are confined chiefly to the great cities. The harm wrought by this type of school in the profession it would be hard to overestimate. The overcrowding and the temptations to devious and unfair methods are only a part of the evils which have resulted, and the most apparent. Such schools have generally lacked not only the facilities for sound medical and surgical training, but the ideals and traditions which make for character, and for the practitioner of medicine high character is as necessary as

high skill. In such schools young men have learned medicine as a business, not as a profession. For a generation to come the people of the various states will suffer at the hands of medical practitioners who were taught the business of medicine in the commercial schools of the last fifty years.

Oregon furnishes an exceptional opportunity to obtain some light on the much discussed question whether or no the graduates of good medical schools go in overwhelming numbers to the large cities, so that the smaller towns and the countryside are necessarily dependent on the weak schools, which must be maintained for their benefit. Oregon has only one large city. The state therefore affords an unusual opportunity to ascertain whether the graduates of the strong schools go to Portland, while those of the weak schools settle in the smaller towns and the countryside.

The local schools must be considered by themselves. Of their graduates 44 per cent are in Portland. Ten of the strong eastern schools, Harvard, Johns Hopkins, Rush, Northwestern, Michigan, Columbia, University of Pennsylvania, Jefferson Medical, Toronto, and McGill, have sent over 200 practitioners to the state, of whom almost exactly 50 per cent are in Portland and 50 per cent are scattered thru the state. In detail the distribution may be analyzed as follows: Of the total of 469 physicians, 321 came from institutions now belonging to the A Plus and A classes, and of these 118 were graduates of the local medical schools; only 20 and 9 came from institutions now in the B and C classes respectively; the remainder, 119, were drawn widely from institutions now merged or out of business.

The graduates of weak schools in Iowa, Kansas, Colorado, Texas, California, Kentucky, and other states, no less than the graduates of the thoroughly disreputable agencies for medical degrees which have hitherto existed in Chicago, St. Louis, San Francisco, Cincinnati, New York, Boston, and elsewhere, who have sought Oregon for a place of business, have not as a rule gone to Portland. They flourish mainly in the smaller towns.

The inferences from these statistics seem to be these: The local medical school, whether strong or weak, as it has hitherto existed, tends to saturate the nearby city. Regardless of its facilities, many candidates for medicine will enter the local school and go into the practice of the city which is near and convenient.

The graduates from the strong schools situated at a distance tend also to the large cities. The larger prizes are there. Such schools, however, send nearly half their graduates to smaller places and to the country. The graduate of a good school will go wherever a practice is to be had. Where no practice is to be obtained, or one insufficient for support, neither the graduate of the strong school nor of the weak school will settle.

Finally, in a state like Oregon the graduates of the weakest and least reputable schools seek the small towns. This situation might be altogether different in a city differently situated. Portland has been so saturated by the local schools that one wonders that practitioners from outside had the courage to enter upon practice in

the face of such competition. But one does not find among its 469 physicians many graduates of the fraudulent concerns so common in eastern cities. In Oregon these have taken to other fields. The local talent was too well represented, and the field too crowded.

What induces men who are looking to the life of a physician to enter the inferior half-commercial school or the thoroughly disreputable one?

Advertising and propinquity do much. Schools that live on fees use every means to attract students. Well-meaning but uneducated youths are the easy prey of these establishments. The requirement that a candidate shall present a certain attainment in general education has done more to make the business of such schools unprofitable than any other one factor. To-day it costs as much (except for travel) to study in an inferior school as to study at a well-equipped one. Indeed, those schools which live on fees alone are forced to higher charges. The whole trend of medical education is toward a situation where only those schools can survive which preserve high ideals both of medical skill and of personal character. Under this régime both city and country will be gradually supplied with physicians who are both well taught and high-minded.

CALIFORNIA

Turning to the great state of California, one finds a situation in sharp contrast to that of Oregon and Washington.

California is an empire in itself. Its coast line from Point Saint George to San Diego is nearly eight hundred miles. It contains two large cities, San Francisco, which, with the population clustered around the bay, includes nearly a million people; and Los Angeles in the south, growing rapidly and containing, with its surrounding towns, a population three-quarters as large. Thru differences in topography, in climate, and in industrial and economic resources, the northern and southern portions of the state form two distinct regions, of which San Francisco and Los Angeles are the foci. In the long run medical education will be provided in both these cities, for thousands of miles to the eastward there are no other centres of population adequate to the support of a strong medical school, and San Francisco and Los Angeles are themselves five hundred miles apart.

A complete study of San Francisco as a medical centre would take into account not only the two strong schools supported by the University of California and the Leland Stanford Junior University, but also the Post-Graduate School of Medicine and three weak schools which still maintain a precarious existence in San Francisco and Oakland. The Post-Graduate School will in time join one or the other of the university schools; and the disappearance of the three weak schools is only a question of time. For the future of medicine in San Francisco one must look to the schools maintained by the two universities.

The development of medical schools in San Francisco has been quite analogous

to that of the other American cities. A school was always started by a group of practitioners in medicine. It gradually acquired reputation and attracted students. Almost inevitably the ambitions of members of the medical profession not included in the faculty gave rise to the establishment of a rival school, and the rivalry was often intense. This is the history of medicine in Chicago, in Cincinnati, in St. Louis, and in nearly all American cities.

Two such medical schools arose in San Francisco, conducted by rival groups of practitioners. One of these became, in 1872, the medical department of the University of California. The university did not enter upon a development of its medical school vigorously for some years, and its progress depended in the main upon the devotion and intelligent service of a few medical practitioners who were connected with it. More recently the university has energetically gone to work to develop a modern school of medicine; and in the natural order of things the rival medical school—known as the Cooper School of Medicine—would have disappeared. The owners of the Cooper Medical School, foreseeing this end, offered their school a few years ago to the Leland Stanford Junior University, which, up to that time, had not been engaged in the teaching of clinical medicine.

The motives which induced the authorities of Stanford University to duplicate the difficult and expensive task of medical education in San Francisco were undoubtedly varied. Stanford University was placed by its founder in an isolated position, on a seven thousand acre ranch. While this gave to it certain advantages for college work, it imposed definite limitations in other directions. Those who were ambitious for the university had long coveted representation in the city of San Francisco. While the Stanford authorities persuaded themselves that here was a great public service which they ought to render, it is difficult for the student of education who surveys the matter impartially to see in this decision the working of any larger motive than that of institutional ambition. The arguments put forward by the friends of Stanford University in the main take the line that a privately endowed institution could perform a service in medicine which a state university, hampered by political relations, could not perform. As President Jordan phrased it in a letter to the Foundation, in 1910, "Just what the University of California ought to do is a question. Perhaps the best thing for them to do would be to withdraw from clinical work altogether, as the state is hardly likely to support them adequately in this work." The representatives of the Stanford University were able to persuade themselves also that the setting up of a clinical department in San Francisco would bring to their institution not only prestige but financial support.

That the two great universities of California should lend themselves to a perpetuation of the medical rivalry which had so long existed in San Francisco seems a matter of regret from every point of view. The world has a right to expect a better solution than this and one more in accordance with the largeness of true university relationship. It is true that both of these schools have improved enormously in the

last few years. Stanford University has transformed the Cooper School of Medicine into a modern, efficient school for medical teaching. The University of California has rapidly improved its clinical teaching during the same time. The two schools, according to the judgment of those qualified to speak, do not differ widely. Both are placed by the Council on Medical Education in the highest class; both have high entrance requirements, excellent laboratory facilities, and good clinical opportunities; both offer a modern medical education upon a high plane. It would be strange if this were not true, considering the expenditures that these schools are making in the education of two small bodies of students.

The medical school of the University of California expended last year \$160,000 upon its medical teaching, including the hospital, but after deducting the receipts of the hospital. The Stanford medical school expended some \$130,000 in the same way. Together the two institutions are spending approximately \$300,000 to educate a small student group—a sum sufficient to maintain one of the great medical schools of the world. And these expenditures are only the beginning. Ultimately these institutions will expend far larger sums. I do not believe that in the long run public opinion will approve a rivalry of this sort in a field of education so technical and so expensive.

During the past year the growing cost of these rival schools brought about two suggestions, each of which was interesting. The first was the recommendation of the president of Leland Stanford University, that the medical school in San Francisco be given up, together with the professional instruction in anatomy and bacteriology which is offered upon the campus at Palo Alto. This recommendation was made in view of the belief that medicine was absorbing so large a portion of the income of the university that it would ultimately cripple the development of the older university departments. The trustees did not accept this recommendation.¹

The other suggestion was that the two universities unite their resources to conduct jointly in San Francisco a single school of clinical medicine. This suggestion seems originally to have come from the outside, but the trustees of Stanford took the initiative in acting upon it. Committees of both boards were appointed and conferences were held, but to little purpose. Finally, the representatives of the University of California sent a communication to the Stanford University representatives stating that in their judgment it was necessary for the University of California to have a majority of representatives in any board formed to manage the joint school. This was regarded by Stanford as an ultimatum closing the negotiations. Later, the University of California regents sent an enquiry to Stanford expressing a desire for some form of union in medical education, and asking what terms Stanford University would consider feasible. In response to this, Dr. Victor Vaughan, Dean of the Ann Arbor

¹Stanford University published the first financial statement it has given to the public since its foundation in the *Stanford Alumnus* for March, 1914. This statement is in very general terms, and gives no details of the expenditures of different departments. The report shows that the total income of the university for the year ending July 3, 1913, amounted in round numbers to \$940,000, and that a surplus had been accumulated during twenty-five years amounting to \$521,000. Its expenditures are given as \$1,050,000, leaving some \$411,000 in the reserve and other unexpended funds.

Medical School, and at that time president of the American Medical Association, was invited by the Stanford trustees to make a report on the matter.

Dr. Vaughan's report was published in *Science*, July 24, 1914, page 126. It contained but a single paragraph referring to the matter of coöperation in medicine, which is sufficiently brief to be quoted. It runs as follows:

"Lastly, I come to the matter on account of which I was called to visit you. The time may come when it may be wise to consolidate the two University medical schools of San Francisco, but I do not believe that this would be wise at present. Stanford, from what I can learn, can afford to develop its medical school without material hindrance in the growth of other branches, and I believe that this is the wise thing to do."

The brevity of Dr. Vaughan's reference to the question is doubtless due to the fact that a decision had already been reached before his inspection of the school took place. On the 29th of May, the day of his arrival in California, the trustees of Stanford University met and adopted the following resolutions in response to the expression from the regents of the University of California, enquiring whether a plan could be formulated for an amalgamation of the work of the two universities in clinical medicine:

"Whereas, This Board of Trustees being entirely in accord with the desire expressed by the Regents to effect a merger of the work in medicine by the two universities, if such a merger were possible, appointed a committee for that purpose which has carefully considered and reported upon the questions involved therein, after obtaining the aid and advice of educational experts, now be it

"Resolved, That this Board of Trustees after full deliberation is reluctantly convinced that no basis of merger of the said two medical schools can be formulated or exists, which is compatible with the legal powers and duties of either university; and further that if such a merger could be formed it would cause no material saving in expense to either university; and further that the interests of each university and of the public will be best served by the maintenance of the two separate schools, each pursuing its own methods and standards, and so far as possible supplementing each other."

In view of this action of the trustees, Dr. Vaughan's report is to be looked upon in the light of an autopsy rather than a diagnosis. The simple fact is that the proposal was complicated by too great an admixture of institutional ambitions, personal feeling, and medical politics to have consideration on its merits. The two boards of trustees sparred with each other as cautiously as two professional boxers. Such a coöperation as was contemplated is possible only when both parties really believe in it and desire it, and are ready to make reasonable concessions to secure it.

The question of two medical schools maintained at high cost upon a modern basis in a moderate sized city is one of greater importance than that of local interest. "That the interests of each university and of the public will be best served by the maintenance

of the two separate schools" is a conclusion that can be accepted only after very close examination, for the reason that this question arises in a large number of American cities. If it represents a sound view of medical education, it means that many of these communities will be called upon to duplicate expensive laboratory and hospital facilities in order to serve best the interests of the universities and of the public.

No one who knows the facts about medical education in large medical centres, like Berlin, Vienna, or Edinburgh, can fail to appreciate the difficulties which arise when many hundreds of students are brought together in one institution. Nowhere have these difficulties been more clearly pointed out than in the 1912 bulletin of the Carnegie Foundation, which dealt with Medical Education in Europe. It is equally clear, on the other hand, that it is not necessary to reduce numbers to an extreme limit in order to procure efficiency of instruction. The authorities of the Stanford medical school have been inclined to put forward an extreme view of the value of the very small school of medicine. It is a fair statement that those who know medical schools throughout the world agree that a school of two or three hundred students can be organized to secure quite as great efficiency as a school of fifty or seventy-five, and at relatively less cost, and one school of such size would supply many more practitioners than can find places in the already overcrowded region tributary to San Francisco.

In all such matters, trustees and presidents are under strong temptation to consider their university's prosperity and power as synonymous with the interests of the public. This does not always follow. The interests of the public would in my judgment be conserved and promoted by the development in San Francisco of a single strong school of medicine. Rivalry in education is not always to be avoided, but rivalries that are brought about in a field so narrow, so expensive, where professional and personal interests so easily clash, do not make for public interest or for helpful university relations. To one who looks at medical education in San Francisco and in California from the standpoint of teaching and of university development, the rival medical schools seem to have an admirable opportunity for a practical demonstration between institutions of those principles of peace and conciliation which President Jordan has so eminently represented.

Los Angeles, five hundred miles to the south of San Francisco, occupies a situation both with respect to California, Mexico, Arizona, and Texas, which is likely to make it the seat of a medical school of higher or lower grade. Outside of the sectarian schools which have found their home here, there have existed during the past few years two institutions representing scientific medicine: one, the Los Angeles Clinical Department of the University of California; the other, the Medical School of the University of Southern California.

The singular venture of the University of California in taking under its care a second clinical school in Los Angeles was fully discussed by the Foundation in the bulletin on Medical Education, in 1910. This school was conducted by the best medical practitioners of the city and offered certain admirable advantages in clinical edu-

cation; but, as was clearly pointed out in that bulletin, the assumption that men who had taken their first and second years in San Francisco would afterwards go to Los Angeles for their clinical training was unsound. This situation has been realized, and instruction in the Los Angeles branch of the medical school has been given up, the small appropriation still devoted to the school being used for a public clinic.

The remaining medical school in Los Angeles is the College of Physicians and Surgeons, nominally the medical department of the University of Southern California. This university has, however, been too weak to furnish to the medical school either educational ideals or financial support. Its essential contribution has consisted in lending its name. The school is essentially a proprietary institution under the control of a few practitioners; and it breathes this atmosphere from cellar to garret. It would be difficult to find a more striking contrast than that which exists between the laboratories and lecture rooms of this school and those of the University of California and Stanford University in San Francisco. Notwithstanding this, the school had last year the largest student enrolment of any medical school in the coast states, and one approximately equal to the combined attendance of Stanford University and the University of California.

The school is rated by the American Medical Association in Class B, their third class. The income of the school is something over \$30,000 a year, the entire sum coming from fees. The university contributes nothing. It has not even secured for its clinical teachers the strongest men of the profession in the city.

In view of this situation, one reads with some questionings the description of this school as given in the catalogue of the University of Southern California:

"The University of Southern California was one of the first institutions in the west to broaden the scope of the curriculum in its medical department. In 1885, when the medical department of this university was founded, the trustees placed themselves on record for higher medical education. . . . Money has been liberally spent and no pains have been spared to equip medical laboratories, to broaden and perfect the medical and clinical departments and to place them in charge of capable and expert clinical teachers and instructors."

It is fair to call this statement misleading. A more correct statement in the catalogue would run something like this:

"The University of Southern California, lacking the means to support a medical school, lends the shelter of its name to a school conducted by medical practitioners. The university confers the degrees, but assumes no responsibility for support, and students will pay their fees and get such instruction as the faculty may decide to give."

As one observes this combination of a weak university and a weak medical school, he cannot but regret that the authorities of Stanford University did not satisfy their ambitions by placing their clinical department in Los Angeles rather than in San

Francisco. It was too much to expect that Senator Stanford should have been inspired to found his university in Los Angeles instead of upon his Palo Alto ranch, but many educational questions would have been helped to their solution had such an inspiration come to him.

The future of medicine in Los Angeles seems far from encouraging. While the two strong universities vie with each other in San Francisco, there is no educational institution in Los Angeles able at this time to deal with medicine upon a sound and fruitful basis; and yet it seems clear that Los Angeles will continue to be the site of a medical school. It is difficult, however, to see any satisfactory solution of the problem of education in medicine in this city until thru the education of public opinion and the arousing of public interest a strong university school is made possible.

Nothing but lack of publicity can account for the perpetuation of an institution like the California Eclectic Medical College, which is placed by the Council on Medical Education in Class C of its classification. The material equipment of this college was described in the Fourth Bulletin issued by the Foundation, and there is little reason for believing that conditions have changed. A study of the catalogue for 1914-15 brings forth some interesting facts which the public cannot ignore.

Of the ten members of the board of trustees nine are on the faculty of the college, which consists of forty members. The dean of the college is also dean of the Los Angeles Polyclinic. In the total faculty list the name of one member, a graduate of 1913 of the college, is given twice, once as "professor of histology and embryology," and again as "instructor in principles and practice of medicine." Twelve of the names included in the list of the faculty are found again in the list of students for 1913-14, five being in the junior and seven in the senior year. All of these names are presented with the appropriate degrees of D.O. or M.D., or both, an array of graduate students that would do credit to a research institution. Of the twenty-eight members of the faculty remaining, fourteen are graduates of Eclectic Medical Colleges, two of institutions placed by the Council on Medical Education in Class B, and the only member from an institution in Class A comes from a homeopathic medical college; nine members of the teaching faculty are not mentioned in either of the national medical directories. The names of forty-two students are given in the enrolment for 1913-14, including the twelve who are also mentioned as members of the faculty and as already possessing at least one medical degree. In addition fourteen of these students are again presented on the same page as graduates; it is not clear whether these are to graduate in 1913-14 or whether they are graduates of other institutions. Thirty-two of the forty-two students are natives of California. A further fact that merits attention is that two of the students appear as students in the College of Osteopathic Physicians and Surgeons of Los Angeles according to the announcement for 1914-15, while one member of the faculty, the "professor of manual therapeutics," appears both as "instructor of osteopathic technique" and as student in the same osteopathic insti-

tution. Such facts as these may raise the question whether the names at least, if not the students, are not being overworked.

The catalogue states that the work is "fully accredited by the State Board of Medical Examiners;" in 1914 one member of the faculty served on this State Board. The requirements for entrance in 1914-15 were a California high school diploma or its equivalent, or students "may pass a satisfactory examination to enter the college;" no details of this examination are given (page 6). On another page of the same catalogue evidence that the college authorities have caught the spirit of the times is presented in a paragraph under the heading "Premedical Education." Students are informed that they may combine with the medical course one or two years' college work in the Los Angeles Junior College, and "in addition thereto this college gives a series of preliminary lectures and demonstrations calculated to determine the student's fitness to practice medicine as well as to prepare him to begin its serious study intelligently." Finally, the statement is made (page 13) that "beginning October 15, 1914, the applicant for matriculation must possess a California high school diploma or its equivalent also he must have completed one year of work of college grade" (*sic*)—apparently students may make a choice of entering according to requirements on page 6 or on page 13. The college in any case reserves to itself "the right to make changes without notice in the details of the curriculum, in the rules of the college and in relation to fees, as may prove necessary for the prosperity of the institution."

The catalogue is at pains to define Eclecticism. It is pointed out that "after years of opposition to bigotry and intolerance and the unnatural and injurious practice of the dominant school, eclecticism finally won recognition," and "even if the medical profession is overcrowded, the qualified eclectic need have no fear of the future." It may, perhaps, be due to "the cry for more men" that the candidates are compelled to do double duty as students and teachers. Since "it strives to avoid all harmful extremes and seeks the safe middle ground of practical experience," the institution appears to be at pains to bring to public attention on three different occasions the specific medicines presented to it by a firm of manufacturers "in a handsome glass cabinet for the use of its students in studying materia medica and therapeutics;" perhaps the lengthy tribute paid on page 11 to these specific medicines, "uniform in strength and always reliable," was adequate compensation to the manufacturers.

One hundred and forty-eight graduates of this institution are now fully licensed members of the medical profession of California.

While the whole coast is subject to a large immigration of physicians from eastern states and colleges, perhaps in no other region is the flow of medical emigrants so strong as in Southern California and in the neighborhood of Los Angeles. So far as Southern California is concerned, it will be many times oversupplied by physicians of excellent training, if there exists no medical school in Los Angeles. Not only, however, is that city the seat of the most populous medical school on the coast, but numerous agencies for training men in sectarian medicine flourish. The osteo-

paths have here one of their largest schools, and all other varieties of healers are well represented.

In addition to what is already an oversupply of regular physicians there must be taken into consideration no less than 2106 persons who practise the art of healing as members of one sect or another. These include osteopaths, who may be licensed by the state in the same way as regular physicians, Christian Science practitioners, spiritualistic healers, divine healers, chiropractors, mechanical therapists, men's specialists, naturopaths, as well as a small number of unlicensed Japanese and Chinese physicians. Here, too, the southern part of the state seems to provide scope for fifty per cent more sectarians than the north. Los Angeles alone has almost as many Christian Science healers (239) as the northern section of the state. The following figures offer an interesting commentary on medical conditions in California generally:

	<i>Southern California</i>	<i>Northern California</i>
Christian Science Practitioners	452	289
Osteopathic Practitioners	397	245
Chiropractors	171	109
Mechanical Therapists	97	42
Spiritualistic Healers	25	20
Divine Healers	21	14
Men's Specialists	19	37
Unlicensed Chinese Physicians	9	19
Unlicensed Japanese Physicians	4	16
	<u>1195</u>	<u>791</u>

There are also 105 naturopaths practising throughout the state.

Every wind of doctrine that blows in the field of medical teaching finds here free scope. Only a climate wonderful in its health-giving qualities could sustain a population so saturated with medical practitioners of every known variety.

It would be interesting, were it possible, to discover to what extent the status of the medical profession of a state is reflected in its Board of Medical Examiners. This should be a body that represents the highest ideals of educational qualifications for entrance to the profession. It might be expected, too, that the members of such boards should themselves have enjoyed the best possible training and have some acquaintance with the educational problems and standards of their profession. The California State Board of Medical Examiners consists of nine members and a secretary appointed by the governor, and its composition in 1914 is interesting. Two members, one of these the president of the board, were osteopaths; two were graduates of the Cooper Medical College; two of the University of Southern California College of Medicine; one graduated from the Bennett Medical College, a Class B institution; one from the New York Homeopathic College and Hospital, a Class A college; and while one came from a college of the first class, A Plus, the Johns Hopkins University Medical Department, he was a graduate of only four years' standing. The only member of the board who

was engaged in teaching medicine was the graduate of Bennett College, a member in 1914 of the faculty of the California Eclectic Medical College. The board must be faced with a truly stupendous task when it undertakes to endow a graduate of the University of California Medical Department with the same qualifications to practise medicine as the graduate of the College of Osteopathic Physicians and Surgeons of Los Angeles, an institution that will only begin to require graduation from a four-year high school, "or its equivalent education," as the minimum entrance qualification from the class entering in February, 1915, and will extend its course from three to four years at the same date.

The states in which the 5203 medical practitioners of California have been educated are shown in the following table:

DISTRIBUTION OF PHYSICIANS IN CALIFORNIA ACCORDING TO THE SOURCE OF THEIR
MEDICAL PREPARATION

	Total	San Francisco	Oakland	Berkeley	Los Angeles	Pasadena
California	1,930	655	158	56	267	10
Illinois	723	115	24	7	206	31
New York	376	66	10	9	103	16
Pennsylvania	335	49	22	3	80	15
Ohio	282	24	7	2	78	12
Missouri	272	39	8	3	71	4
Michigan	174	19	11	1	38	5
Foreign	143	71	9	1	19	1
Iowa	121	11	7	3	25	..
Kentucky	109	9	7	1	27	1
Maryland	106	28	5	4	24	5
Massachusetts	103	20	5	1	26	6
Tennessee	70	4	4	1	11	..
Ontario	50	7	3	..	11	..
Colorado	46	5	3	2	14	2
Indiana	46	2	..	1	18	..
District of Columbia	32	9	2	1	6	..
Oregon	32	10	4	3	2	..
Minnesota	31	..	2	..	11	1
Vermont	31	6	3	2	6	1
Quebec	28	4	..	..	7	1
Nebraska	25	3	..	..	7	..
Louisiana	23	8	..	1	2	..
Maine	19	..	5	..	..	..
Virginia	18	6	1	..	2	..
New Hampshire	17	4	..	..	4	1
Georgia	15	2	..	..	3	1
Connecticut	10	2	..	1	3	..
Kansas	9	..	..	..	2	..
Wisconsin	6	..	..	..	3	..
Alabama	5	2	..	..	..	..
Texas	5	1	1	1	1	..
Manitoba	4	..	1	..	..	..
Arkansas	3	..	1	..	..	..
South Carolina	3	1	..	..	1	..
North Carolina	1	..	1	..	..	..
Nova Scotia	1	..	..	..	..	..

The examination of these statistics should begin with those of the California schools that have sent an army of 1930 physicians and surgeons to practise in California. Of these 1156 came out of the two old schools at San Francisco, the Cooper Medical School and the University of California; 492 are practising in San Francisco, 82 in Oakland and in Berkeley, while only 63 are in Los Angeles.

In other words, just as in Oregon (and indeed generally), the great mass of students go into local practice. This is true of the weaker schools as well as the stronger. The California Eclectic Medical College, the Hahnemann Medical College of the Pacific, and the College of Physicians and Surgeons of San Francisco have contributed 429 practitioners, of whom 153 are in practice in San Francisco, and only 25 in Los Angeles. The Oakland College of Medicine has furnished 23 practitioners, of whom 17 are in Oakland. The two medical schools that have operated under the name of the University of Southern California, including the present College of Physicians and Surgeons, have contributed to California 273 practitioners, of whom 179 are in Los Angeles. An unworthy or inefficient medical school is a source of trouble to a wide area, but the heaviest consequences fall on the city which shelters it. A community pays a high price for the privilege of harboring a weak medical school.

When one examines the sources whence physicians migrated to California, the result resembles that already found in Washington and Oregon, with certain effects due to the presence of the two large cities and the tendency of migration to California on the score of its climate. The great contributions have come from the medical schools of Chicago, New York, Philadelphia, Cincinnati, St. Louis, Ann Arbor, Boston, and Baltimore. The medical immigration to Southern California has been accentuated by all these causes. Perhaps in no other quarter of the habitable globe is a population so saturated with physicians. So far as local medical service is concerned, there was never a city which stood less in need of a medical school than Los Angeles. For a variety of reasons a steady stream of medical emigrants, many of them from the best medical schools of the country, flows into it and the surrounding region.

The drift is seen in the following table, showing the immigration from a group of strong and well-known schools of medicine:

<i>Medical Schools</i>	<i>California</i>	<i>San Francisco</i>	<i>Los Angeles</i>
Rush	225	39	71
Northwestern	105	5	33
Johns Hopkins	51	27	15
Harvard	68	18	16
University of Michigan	126	11	31
Columbia	97	28	26
University of Pennsylvania	107	18	31
Jefferson Medical	124	14	28
McGill	22	1	5
	<u>925</u>	<u>161</u>	<u>256</u>

Of the 3273 California physicians who obtained their medical training outside the state, 1772 came from schools graded by the American Medical Association in the first two classes (A Plus and A), 207 came from the Class B schools, 75 from the Class C (fourth rate) schools, while 1219 came from schools now happily disappeared.

It requires little examination to show that four well-equipped, moderate-sized schools, one at Seattle, one at Portland, one at San Francisco, and one at Los Angeles, could supply all the region tributary to these centres for a century to come. What are the obstacles that stand in the way of a program so sensible and so evidently in the public interest?

MEDICINE AND POLITICS IN OHIO

THE most noteworthy movement in American university education in the last decade has been in the field of medicine. The school of medicine has become a true university school, and has come to realize its obligations to the community and to the public health as never before. Medicine is an applied science, and the physician or surgeon looks upon his career as a scientific profession, not as a business. The sense of responsibility for the prevention as well as for the cure of disease has been enormously quickened. As a part of this whole movement, the output of uneducated and ill-trained physicians from weak medical schools has greatly diminished, altho the number of medical schools is still far in excess of the needs of the country. This notable educational advance has come in the main from influences outside the universities, and most of all from the leaders of the medical profession itself.

Many factors have complicated this forward movement of medical reform. Perhaps the one most in evidence is what is known as medical politics. For more than two generations, medical teaching has been a perquisite of the medical practitioner. A place upon the staff of a medical school has been sought not only because it gave to the practitioner better standing, but also because it insured indirectly a larger income. At every turn the appointment to faculties has been complicated by the financial interest of the teachers. In many states medical politics has been extended into the domain of legislation by the effort of practitioners to obtain concessions for rival schools. Finally, medical politics has shown itself in its most uncomfortable form in the rivalry between divergent camps of practitioners, such, for example, as exists between what formerly were called allopaths and homeopaths, or, as they are designated in every-day language, between the "regulars" and the "new school."

The development of good medical schools during this period of reform has also been influenced by the attitude of the universities and colleges. Fifteen years ago the universities assumed the responsibility for their medical schools in very few cases. They simply sheltered a group of practitioners who collected the fees and conducted the school. The last few years have brought sharply to the consideration of university authorities not only the cost of modern medical education and the enormous over-

production of physicians, but also the responsibility of the university for the ideals and the support of the medical school which it harbors. It is still true, unfortunately, that institutional ambition, characteristic of American colleges and universities, has prompted a certain number of them to shelter medical schools to which they could furnish neither ideals nor support.

In the midst of these divergent forces—medical reform, medical politics, and university ambition—the American Medical Association, thru its Council on Medical Education, has been the most active agent for betterment in medical teaching, in the furnishing of requisite laboratories and hospitals, and in the placing of medical institutions upon a sound basis. Like most reformers, the Council has at times been tempted to go too fast.

The Ohio State University, thru its governing body, has, during the past summer, adopted a policy with respect to medical education in which at least some of the factors just mentioned have played a part. The university, by a resolution adopted in January, 1914, accepted the property of the Starling-Ohio Medical School of Columbus, and constituted this school the department of medicine of the Ohio State University, thus becoming responsible both for the standards and for the support of the school. A few months later it also announced its purpose to establish a college of homeopathic medicine, and accepted a homeopathic school in Cleveland, transferring the student body from Cleveland to its own campus. This action, in view of what had gone on in medicine in the United States during the last ten years, is so remarkable, and of such significance to every college and university as well as to every medical school, that it deserves consideration at some length. If the policy adopted by the Ohio State University is one to which other states must come, the decision is one of far-reaching importance. It is for this reason that I have sought to obtain, as fully as possible, the considerations that induced the Ohio State University to undertake this program of medical education.

In making this effort, I have conferred with the board of government and the president of the university, with the medical schools themselves, with prominent practitioners of both schools, and with the Council on Medical Education of the American Medical Association. I am indebted to all of them for the spirit in which they have welcomed my enquiry, and particularly to the board of government and to the president of the university. The board did not look upon such a study as an intrusion. It recognized fully that a state university is a public institution, and that as such it is a fair object of scrutiny by all those interested in education. The board held a special meeting at which all its members were present, and at which they explained at length the circumstances under which their action had been taken.

The government of Ohio State University is vested in seven trustees appointed by the governor and confirmed by the senate. Each trustee serves seven years, one trustee retiring each year; but reappointments are common. The board is therefore a stable board. Two of the present trustees are graduates of the university. Four others

are graduates of other colleges. All the members of the board are men of unusual intelligence and character, who give to their duties a high order of conscientious service.

The process thru which the board was led to take its action is described by them in some such terms as follow:

The members of the board had no desire on their own initiative for a medical school. They were in fact doubtful as to the need of such a school and as to the ability of the university to support it. They were, however, appealed to most strongly by members of the medical profession connected with the Starling-Ohio College to take over their institution. It was urged that only in this way could the medical school in Columbus be continued, in view of the raising of standards and the decreasing income from tuitions. Furthermore, it was urged upon the members of the board by the representatives of this school and by other physicians that it was the duty of the state university to provide medical instruction. Finally, and chiefly thru the efforts of the representatives of the Starling-Ohio Medical College, the secretary of the Council on Medical Education of the American Medical Association appeared before the board and urged the adoption of the Columbus school. In addition, he described the Starling-Ohio College as one of the strong medical schools of the country, a school which the Council on Medical Education was ready to place in the same group with Johns Hopkins and Harvard. It was on such representations, the board states, that they were induced to consent to the adoption of the Starling-Ohio College, provided a suitable enabling act was passed by the legislature.

This enabling act was introduced into the Ohio legislature by the dean of the Starling-Ohio College, and without support from the trustees of the university. Inasmuch as the president of the university was also the president of the board of trustees of the Starling-Ohio Medical College, a friendly coöperation may be at least assumed. In the legislature the bill ran against a snag. The homeopathic physicians of the state objected to the establishment upon a state foundation of a college of medicine under the control of what they denominated the "regular" doctors. The governor of the state at the time was strongly devoted to homeopathic medicine, and the homeopaths were in a position to defeat the bill. This they frankly announced they would do unless provision was made also for a homeopathic school of medicine under state control and support. The story of the negotiations by which this impasse was removed is not entirely clear. The board of trustees of the university insist that they gave no assurance that a homeopathic school would be established. The homeopathic physicians state frankly that they received satisfactory assurances that homeopathic medical education would be taken care of before they let the bill thru. The university and the homeopaths seem to have come to terms at a conference held in the governor's office. Whatever may have been the difficulties in the way of the bill, they were removed; and on April 18, 1913, the bill was passed in the following form:

"Be it Enacted by the General Assembly of the State of Ohio:

"*Section 1.* That for the purpose of advancing and promoting the science and art of medicine and the science and art of dentistry, the Board of Trustees of the Ohio State University be and they are hereby authorized and empowered to create, establish, provide for and maintain in said University a College of Medicine and a College of Dentistry; and to negotiate for and receive conveyances and transfers of property, both real and personal, to be used for the purposes aforesaid; and to accept the students now in attendance at any college of medicine, dentistry or pharmacy whose property is so acquired, with the rank and standing as certified by the proper officers of such college, and to take such steps as may be necessary to protect the professional rights of the alumni of such college or colleges and their predecessors, and to receive from such college or colleges such papers and records as may be necessary for that purpose."

"*Section 2.* This act shall be in force from and after its passage."

The next step in point of time seems to have been taken by the Council on Medical Education of the American Medical Association. The Council, as all interested in medicine know, is the representative of the American Medical Association in medical education, and in the name of the Association classifies medical colleges. At this time its classification was as follows:

The highest class was designated under the term A Plus, the second class designated A; the third, Class B; and the lowest, Class C. The Starling-Ohio Medical College was in Class A — the second class, a fairly generous rating for it.

On December 27, 1913, the Council passed the following resolution of encouragement, which was transmitted to the trustees of the university:

"*Resolved* that if Ohio State University takes over the Starling-Ohio Medical College, maintains its present standard and provides adequate financial support for its future, the school will have fulfilled the requirements for a Class A Plus rating."

It is quite evident that the board of trustees of the university, after the passage of the enabling resolution, in April, 1913, had some misgivings as to its ability to take over any school at all. It is equally evident that the representatives of the Starling-Ohio College who saw approaching bankruptcy were using every means to unload the burden of their medical school upon the university. In this effort they had the hearty support of the Council on Medical Education. It goes without saying, however, that the Council did not know of the contemplated second school, nor does it seem probable, in view of subsequent developments, that the board took at its full value the reference made by the Council to the necessity for "adequate financial support." In fact, the source of adequate financial support seems never to have figured prominently in the deliberations. There was a general feeling that if the state became responsible, the support would be forthcoming. An extraordinarily high estimate appears to have been placed on the value of the property of the Starling-Ohio Medical College. This prop-

erty was in most respects obsolete for medical teaching, and in cash represented a sum insignificant in the establishment of a modern school of medicine. The Starling-Ohio College had, in fact, little to offer a university intending to start a high grade school of medicine.

Very soon after the receipt of this assurance from the Council the board of trustees decided to take the plunge, and on January 27, 1914, adopted the following resolution:

"BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE OHIO STATE UNIVERSITY:

"*First:* That pursuant to an Act of the Legislature of Ohio, passed April 18, 1913 (C. L. 103, p. 344), a college of medicine and a college of dentistry be established at The Ohio State University.

"*Second:* That the proposition of the Board of Trustees of the Starling-Ohio Medical College, submitted to the Board of Trustees of the Ohio State University, under date of January 10, 1913, supplemented by the proposition of the Trustees of the said Starling-Ohio Medical College, dated January 27, 1914, be accepted, provided that the title to the said property is acceptable to the Board of Trustees of the Ohio State University, and to this end a committee of three shall be appointed to take steps to execute the required papers and to examine and pass upon the muniments of title necessary to the carrying out of this resolution.

"*Third:* The Board of Trustees of the Ohio State University desires to go on record as likewise willing to establish a homeopathic department to said College, provided the property inducements offered by the Homeopathic School of Medicine are satisfactory to this Board, and it is ordered that the investigation as to the property of the Cleveland-Pulte Medical College, of Cleveland, Ohio, be continued."

The Starling-Ohio, now become the Medical School of Ohio State University, was duly promoted to a place in the first class of medical schools by the Council on Medical Education on *February 24, 1914*. There was no loss of time and no delay to ascertain the "adequate financial support."

At this point the board parted company with the Council on Medical Education and its advisers in the Starling-Ohio, and began its conferences with the homeopathic representatives. In the course of its enquiry, the board was greatly impressed by the courtesy and good bearing of the representatives of homeopathic medicine as compared with the personal qualities of the "regular" doctors. In the end it decided to establish not merely a "homeopathic department" in the medical college already adopted, but to set up on the campus of the university a complete homeopathic medical school. Whether or not this was involved in the original understanding with the homeopaths arrived at during the legislative struggle is a matter of some difference of opinion. The representatives of homeopathy believed they had secured such assurance. In any event, this was the outcome, and the second school was provided for in a resolution of the board adopted May 26, 1914, which reads as follows:

“Resolved, That the Board of Trustees of the Ohio State University, pursuant to the resolution adopted January 27, 1914, now declares that the time has arrived for the establishment of a college of homeopathic medicine in the University, and that the Board proceed to open the facilities for such instruction next September, subject to the means available for such purpose.”

The university was thus committed to two medical schools, for neither of which was there any assurance of support.

The outline just given affords but a partial picture of the varied influences — personal, professional, medical, institutional, and political — that contributed to the final result. What apparently happened was this:

The board, at the beginning doubtful of the desirability of taking over the Starling-Ohio, finally made up its mind to do this, provided the legislature gave the necessary authority. Confronted by opposition in the legislature, due to the rivalry between two groups of practitioners, and apparently having little information concerning all the travail thru which American medical education has gone in the last ten years, and lacking any definite opinion of its own regarding medical education, the government of the university decided to placate both medical factions and, by giving a school to each, to secure the support of both for legislative appropriation. By this process a question which was primarily educational and scientific was settled finally upon what in the broader sense must be called political grounds.

Notwithstanding the high respect one must have for the governing board of the university, it is difficult to review this action without protest. The actual need of a medical school at this time seems to have received slight consideration. Ohio is overcrowded with practitioners, and in Columbus and its vicinity this overcrowding is excessive. At the end of this paper are given certain statistics regarding the number of medical practitioners in the state, from which it is evident that even if no school of medicine were conducted in Columbus for twenty years, the region would still be oversupplied with physicians.

There was thus no need for hurry in determining what form of medical school ought to be adopted. Whether the board appreciated the cost of medical education is not entirely clear, but so much has been said on this matter in recent years that this information was doubtless before them. The conduct of a medical school upon anything like a sound basis will cost the state not less than \$100,000 a year. In addition, buildings and hospitals must be provided, the cost of which at a low estimate would be not less than \$1,000,000. Their maintenance would involve an expenditure of \$50,000 more. Something like \$150,000 a year is as little as a university can expect to spend upon its medical school and maintain it in a fair state of progress. Toward this sum the tuition fees would contribute but a small amount. To maintain two schools, a university must expend as a minimum something in the neighborhood of \$300,000 a year and provide buildings well on toward \$2,000,000. It is not for an outsider to

say whether or not the state of Ohio should furnish such support. Ohio is a rich state, and it can afford to do for medicine whatever it may find desirable. There are, however, few universities that would be willing from consideration of expense alone to make themselves responsible for a new medical school, to say nothing of two. Medicine is the most costly field of education in which a university can engage. The property of both of these schools is almost negligible in comparison with what must be expended to establish them on a modern basis.

The board has here not only allowed a question which ought primarily to be settled upon educational and scientific grounds to be determined by outside interests, but it has also committed itself to two schools whose theories of medical teaching are antagonistic. A university owes to its state something more than quick obedience to outside pressure; the state has a right to expect from it educational leadership. The right form of medical education is exactly the sort of question that a university is supposed to determine for itself. For a modern university to stand sponsor for two conceptions of medicine—scientific and sectarian—involves not only a singular inconsistency, but a surrender of its educational leadership.

The story of this transaction throws an interesting light also upon certain tendencies which, during the last few years, have become more marked in the relation of state universities to the demands made upon them. The state university is primarily a servant of the whole people. It is quite right that such a university should respond quickly to popular needs; but it is evident that there is a tendency among many state universities—and in particular among those that live next door to a legislature—to be a little too sensitive to a demand which may be construed as an expression of popular opinion if it is conveyed thru the legislature. The tendency is to make the state university a representative of every faction strong enough to demand representation, rather than to make it a courageous leader of the educational forces of the state. In the case of medical education, the state was entitled to the belief that the government of the university would have some views of its own with regard to medical education. If the educational policy that was pursued in this instance is to be continued, any other medical body which is able to muster enough influence in the legislature may demand a third medical school!

A word ought to be said also concerning the advice given to the board of trustees of the university by the representative of the Council on Medical Education of the American Medical Association. The secretary of the council, in appearing before the board, urged strongly the duty of the university to take over the existing medical school, notwithstanding there was no assurance of support for such a school. Such advice is certainly questionable. This process has led in the past to many of the worst situations in medical education that the country has known. A university that has no sure promise of support for medicine should wait till it has such assurance. Otherwise, there results almost inevitably a situation in which the medical school is nominally a university school, while in reality it enjoys neither university ideals nor university support.

The action of the secretary of the council in recommending to the trustees the Starling-Ohio College in such strong terms is still more questionable. The Starling-Ohio Medical College was the residuum of five medical schools which have existed in Columbus during the last eighty years. The final consolidation, which occurred in 1908, formed the present school out of the Starling-Ohio School and the Ohio Medical University. Since this consolidation, the school has made great improvement. Its departments of anatomy, physiology, chemistry, pathology, and bacteriology have been placed upon as good a basis as the income of the school admitted. This income is entirely from fees. These departments are all manned by poorly paid and hard-worked teachers. The staff of clinical and surgical teachers is made up of practitioners retained from the various combinations and consolidations that have been made—similar to those which have gone on in most American cities. The school is in the process of transformation from a practitioners' school to one of scientific medicine; but that transformation has as yet had little effect upon the clinical and surgical teaching.¹ There are, for example, six full professors of surgery, all practitioners, the university having added one since it took possession! That this school, facing extinction, should make every effort to have itself taken over by the university was natural; but that the Council on Medical Education should class such a school with Harvard and Johns Hopkins, and should commend it upon such terms to the trustees of the Ohio State University, is not only unjustifiable, but goes far to stultify the standards of the Council.

The Cleveland-Pulte School, which was made the homeopathic school of the university, was of the weakest description. It was graded by the Council on Medical Education in its fourth class C. In comparison with its facilities, those of the Starling-Ohio Medical College were admirable. In taking over this school, however, the university wisely chose a completely new faculty, made up of non-residents, mainly younger men with modern medical training. The clinical and surgical professors are therefore salaried men giving their time to the college and the tiny hospital just fitted up. The homeopathic school is thus already more completely on a university basis than the older school. The university took over the student body of the school, and agreed to retain for the present both its standards of admission and its tuition fees. The university thus presents for the time two medical schools having not only different theories of medicine, but different standards and different fees. It is announced, however, that within two years both schools are to go upon a basis of two years of college for admission and that the fees will be the same in each.

The reasons for making the new school of homeopathy a continuation of an existing school rather than starting a new one were of a very practical sort. The Cleveland-Pulte, like the Starling-Ohio, was making heavy weather. With a homeopathic college supported by the state, destruction was sure. The acceptance of this school—

¹ The various medical schools which have existed in Columbus have rendered a very deserving local service thru their hospitals and free clinics. Columbus, altho a city of over 200,000, has no public clinic for the poor, no city hospital, and no hospital even for infectious diseases.

notwithstanding its unenviable reputation — secured two results. It gave first of all a body of students at the beginning; but what was more important, it gained the support of homeopathic practitioners throughout the state. A large proportion of these are graduates of either the Cincinnati-Pulte School (now defunct), or of the Cleveland Homeopathic School, later absorbed into the Cleveland-Pulte. This motive is distinctly appealed to in the first bulletin of the university issued in the name of its homeopathic school. It is there stated that the Cleveland-Pulte Medical College has become an integral part of the Ohio State University. "This action," adds the bulletin, "perpetuates the Cleveland-Pulte Medical College, but under a different title and under state control." The way has been made entirely clear for each group of adherents to work for the largest possible appropriation for its own school. This involves two departments of anatomy, physiology, pathology, bacteriology, and other medical sciences, no less than the duplication of clinical and surgical chairs. For, altho the homeopath uses the same anatomy, the same pathology, the same bacteriology as the man who works in the name of scientific medicine, the former insists that homeopaths ought to control the entire course of teaching if the medical student is to come into medicine and surgery with the right point of view. The results of this double program will be observed with great interest.

I venture to add a few words regarding the relations existing between the two groups of medical practitioners represented in these two schools. I do this from the point of view of the layman in medicine who nevertheless accepts the inductive methods of scientific research.

The non-medical reader, brought up in some medical faith, whether allopathy, homeopathy, osteopathy, or what not, seldom realizes how completely modern science has swept away these sects. It does not ask whether a man comes in the name of the one or of the other. Modern medicine has as little sympathy for allopathy as for homeopathy. From the scientific point of view, medicine is a process of reason and practice in which the effort is made to use all knowledge to effect practical ends. It is ready to try promising experiments from any source and to abide by the result.

The homeopathic physician is disposed to accept this statement, but his reply is that this ideal attitude does not obtain in existing medical schools, that these schools are manned by those having the prejudices of the old-time allopath, and that under these conditions homeopathy has no chance for a fair trial except in a school conducted by homeopaths. He complains bitterly of the narrowness and the political activities of the so-called "regulars."

To the layman who has sought to view medical education from a scientific standpoint, and who is brought into contact with practitioners of both groups, there is much truth in these statements. It is true that the great bulk of practitioners throughout the country were educated in medical schools which were, twenty years ago, more or less sectarian. The intolerance of the allopath has been quite equal to that of the homeopath. Scientific medicine, in the sense in which I have just described it, has had

to make its way against the prejudices, the professional jealousies, and the intolerance of both. Between the practice of the modern trained men, whether in one school or the other, the differences are small. Scientific medicine in this larger sense suffers, and will suffer for another quarter of a century, in the antagonism of these and other warring medical sects, for the homeopath is not alone in his outcry against the "dominant" school. The weakest and one of the most unworthy of the eclectic schools announces solemnly in its latest catalogue, "after years of opposition to bigotry and intolerance and the unnatural and injurious practice of the dominant school, eclecticism finally won recognition."

The homeopaths have justly incurred the general disapproval of fair-minded men because of the low standards of education for which their colleges have stood. A large proportion of those who have been drawn into these schools have been influenced by the fact that thru them a license to practise medicine could be had with less preliminary education and under easier conditions than in any but the lowest grade schools. This practice has been steadily defended by those in charge, and such advances as have been made have been those enforced by a rising public opinion and the enactments of state boards. At the meeting of the Alliance of Homeopathic Colleges, held in February last, Dr. Copeland, Dean of the New York Homeopathic College, protested bitterly against the higher entrance requirements. He argued that "a man's career in medicine in no sense depends upon the quality or quantity of instruction he had before he entered medical school." "I want to see," said he, "homeopathy prosper in this country, and instead I see it rapidly declining, largely because we have not any men to send out into the world. I am not going to be a party to this calamity. We need practitioners of homeopathy, and to get them we must have students in our colleges." A more frank defence than this of the policy of enlisting poorly educated and badly trained men to support a waning cause it would be difficult to make. The experience of the whole world for the last hundred years shows that there is no specific condition for securing in any country only the best trained and most devoted practitioners of medicine; but the experience of the whole world also shows that the single provision that the candidate for medicine shall be a well-educated man goes farther to eliminate the unworthy and the unfit than all the other provisions that have ever been enacted. The attitude of the homeopaths in this matter has been quite in accord with that of the eclectics and other similar bodies.

Apart from all this, however, there is a fundamental reason why a man of scientific training, familiar with the inductive science which is the common ground of all scientific progress, is compelled to look upon the homeopath as a sectarian, and is led to think that a modern university cannot afford to stand for any other conception of medicine than that of scientific medicine. Homeopathy as a system of medical practice arose a little more than a hundred years ago in Germany. It rests upon two theories, which are essentially medical dogmas. The first and better known is the doctrine, "*Similia similibus curentur*"—Like things should be treated with like. Under this

theory a drug is assumed to set up in the healthy human organism those reactions for which it is a cure in the diseased organ. To obtain, therefore, curative properties, and to know the curative use of a drug, graduated doses are administered to healthy persons, and from these "provings" a system of drug administration has been derived.

The second dogma of Hahnemann is that of drug potencies. Hahnemann taught that in the successive dilution of a drug there were obtained finally doses whose dynamic effect was quite out of relation to the amount of the drug. As Hahnemann phrased it, these highly diluted doses had a certain spiritual energy.

At the present day there is a great divergence amongst the homeopaths of the United States with regard to the acceptance of both of these theories. Practically all homeopaths accept the first. A large proportion deny the second; and the discussions in the *Journal* of the American Institute of Homeopathy show that this division is acute. Recent writers in the *Journal*, bemoaning the decadence of the true homeopath, lay special stress upon an "energetic and persistent propaganda." "It is our duty," writes one, "and it should be our privilege, to ignore everything in our propagandic work that does not magnify the importance of the keystone of our faith, and the brilliancy of each gem, which will glitter more and more brightly because of the constant use of those whose medicine cases contain no compound tablets, no proprietary remedies, and whose owners do not resort to palliative remedies except in incurable and traumatic cases." Still others bewail the growing intimacy of homeopathy with scientific medicine, and the comment now often made, that "there is little difference between the schools." As one writer adds, "This comment frequently heard is as insidiously detrimental as it is naïve and clever, and we regret to say is foolishly acquiesced in by many spineless homeopathic physicians."

Homeopathy is in fact not simply a system of therapy. It is also a faith, whether the individual who accepts it be practitioner or patient. The ordinary intelligent man has no particular feeling about the system of medicine that his physician practises. To the homeopath the matter presents itself in a different light. With him his system of medicine is a matter of belief, and he is willing to fight for it and to make sacrifices for it. During the present year, for example, the homeopathic school at Columbus, in the absence of a state appropriation, is supported in considerable measure by the contributions of homeopathic physicians and believers. This feeling has of course been intensified by the intolerance of opposing medical practitioners. To be called a sectarian is not pleasant, particularly when this epithet is used by a professional rival whose training and knowledge are plainly limited and whose prejudices are correspondingly great. Any group of men under such pressure is likely to become devoted and aggressive; and in proportion to their numbers, the homeopaths have always exercised a large influence in legislative matters for this reason.

Homeopathy has now accepted the great aids to medicine afforded by the laboratory discoveries of the last fifty years. The well-trained homeopathic physician studies anatomy, physiology, pathology, chemistry, and bacteriology. In making his diag-

nosis, he uses the same tests of blood, of urine, of sputum. The difference comes in his attitude toward the use of these tests, and this difference is in a single field of practice, that of drug therapy. It is at this point that the man trained in science finds it hard to accept the homeopathic position, for it substitutes at this stage a dogma for the universal method of experiment and trial. Homeopathy asks the student trained in the inductive method to lay aside the scientific method when it comes to the use of drugs, and to substitute for it a method of procedure founded upon an assumed dogma. While the man trained in inductive science will readily admit that there is little difference in the practice between the modern trained homeopath and a man trained in the school of scientific medicine, while he might even be ready to accept the homeopath as his physician, he nevertheless feels compelled to protest against the substitution of a dogma for the universal scientific method of experimentation. It is not so much a question of practice, assuming both men equally well trained, as it is of the difference in the attitude of mind. The very fact that the homeopath alludes to his system as a belief is itself a stumbling-block for the man of science. Modern science, whether in medicine or physics, has no fixed beliefs. It submits all to the result of fair experiment; and it is no answer to this fundamental objection to say that the members of the medical profession to-day are not students of scientific medicine in the highest and broadest sense. It is quite true that the transformation has been slow. Scientific medicine in America is slowly winning its way; but between the attitude of scientific medicine and that of any system committed to a faith there is a difference which is fundamental. Doubtless, it is in a large measure due to this fundamental attitude toward research that none of the great scientific discoveries in medicine for the last fifty years have come from homeopathic sources. These have come in the main from practitioners of no school, but from men who were persuaded to investigate in the spirit of impartial, scientific truth, pledged to no faith, governed by no dogma. For all these reasons, a man of scientific training finds himself compelled to look upon homeopathic medicine as representing an unscientific attitude.

Homeopathic writers divide present-day homeopaths into three groups: those who are homeopaths in name only, those who accept Hahnemann's first great theory, and those who believe that all medicine is embraced in Hahnemann's generalizations. This last group is denominated by many homeopaths as "Hahnemaniacs." The claims to extraordinary cures are made by all sects. In this matter the eclectics can outrival the homeopaths. To demonstrate a specific cure for disease, however, one does not need to found a medical school. The world will quickly wear a path to the door of any man of any school or of no school who can prove his mastery of any disease. Medicine is both a science and an art, and into the possibility of cure there enter many factors. The time will never come when the personality and the skill of the practitioner will not be among the important factors.

The great contribution which Hahnemann and his followers made lay in breaking down the existing school of medicine, and in showing its subserviency to the medical

dogmas of the past. While Hahnemann's theory was a dogma, its practical application showed that the prevalent system of dosing, following the precepts of revered teachers, was absurd and harmful; that men recovered just as well or better from smaller doses; that good nursing had more to do with recovery than either the small or the large dose. To-day we recognize that the sick recover in many cases without any dose. Dosing plays a decreasing rôle. The scientific physician of to-day does not give one prescription where he gave five twenty years ago. He will not hesitate to use what is called a homeopathic remedy whenever it proves effective. The great contribution of homeopathy seems to the scientific man to have been its influence upon the development of modern medicine. About the time that it gained a foothold in Europe the great scientific discoveries of the last half of the nineteenth century began, and with them the new conception of medicine as a science. Untrammelled by dogma or preconceived theory, this conception of medicine completely displaced in Germany the various sectarian, contending medical factions that had existed. Homeopathy was one of these divisions. It has served a large purpose, but that purpose seems in the main to have been accomplished.

For these reasons, also, the man trained in inductive science cannot escape the conclusion that homeopathy in this country will in the long run lose itself—just as allopathy has lost itself—in scientific medicine. In Germany, the home of homeopathy, it has practically disappeared. With no discrimination against it, with the simple requirement that any man who wishes to call himself a homeopath must take the full scientific training of all other physicians, the numbers have steadily diminished. There are to-day only about 250 homeopaths among the 32,000 practising physicians of Germany. The same thing has happened in England, where homeopathy, introduced in 1826, has now declined to a point where some 250 physicians and a few hospitals represent the homeopathic movement.

To-day America is the home of homeopathy as it is of all other medical sects. It contains more homeopathic physicians than all the rest of the world together. There are perhaps some 15,000 homeopathic physicians in the United States, of whom, however, only 2976 belong to the American Institute of Homeopathy. A large proportion of these physicians are in the middle west, and the feeling between the two groups of practitioners is stronger in this section than elsewhere. That this theory of medicine will disappear immediately is of course improbable. There is involved in its perpetuation too much devotion, too much feeling, too much faith, to make this possible; but there can be little doubt that in the long run the distinction will disappear, and that homeopathy will be absorbed into the general conception of medicine as an applied science. That end will be reached all the sooner if those who are committed to this attitude will exercise toward homeopathic physicians that sort of courtesy and of intellectual hospitality which men in a learned profession ought to exhibit. No faith, whether it be medical, political, or religious, will disappear in the face of unfair treatment or intolerant words.

Toward all such bodies the trained man of science takes exactly the same attitude and it may be summed up in these words: Whether a man undertake to practise in the name of one or another of these beliefs, he cannot diagnose disease without a sound training in chemistry, anatomy, physiology, pathology, and bacteriology. Given an educated man trained in these fundamental sciences, the state may safely grant him the license to practise medicine in the name of any body of practitioners with whom he desires to be associated. Such an attitude is absolutely in the interest of the whole people, and it would seem to be the only attitude consistent with the intellectual integrity of a university.

Memorandum concerning the Number of Ohio Physicians

Omitting all unlisted practitioners, nature healers, osteopaths, and others, including men who have attended a year or two of medical school but have never qualified for practice, and yet have a surreptitious practice, there are in the state of Ohio 7912 physicians who seek to make a living out of its 5,000,000 inhabitants. This is at the rate of one licensed physician for every 630 men, women, and children, or about three times the number of physicians per thousand of population that one finds in a thickly settled country like Germany, for example, which is generally looked upon as overstocked with doctors. Of the cities of Ohio, Columbus is the most be-doctored. It has one practitioner to every 520 inhabitants; Cincinnati has one doctor to every 560 inhabitants; Cleveland has one to every 800; and Toledo is fortunate in having only one to every 1000 inhabitants.

An extremely significant thing regarding the statistics of Ohio physicians is that to a greater degree than in most states they are home-grown. Of the 7500 physicians from whom educational statistics were obtained, 5568 got their training in Ohio medical schools. The Council of Medical Education of the American Medical Association classified medical schools into four groups, the first two of which are supposed to include all the medical colleges that can be considered respectable. Of the Ohio physicians now in practice, 1990 came from these two higher groups of medical schools, the A Plus group and the A group. But it is interesting to note that 1019 of these better trained physicians come from medical schools outside of the state. In other words, the medical immigration to Ohio has been on a much higher plane than the medical production of Ohio.

A further examination of these statistics brings out some additional interesting facts. From the two lower classes of medical schools in the list of the American Medical Association 844 practitioners of medicine are now at work in the state of Ohio. In all, 2234 of the physicians to-day practising in Ohio have been trained in institutions at present classified by the American Medical Association, whether they are good, indifferent, or bad. In other words, nearly 5000 members of the present medical service of Ohio received their training in institutions which have disappeared entirely and mainly because they have been unable to live under the improved conditions of the last ten years.

The following table shows the sources of training of 5568 physicians trained in Ohio schools and now practising in Ohio. Of the twenty-nine institutions which have existed as independent schools at one time or another, those marked with an asterisk are now extinct or merged with other schools.

CINCINNATI	No. of Graduates	CINCINNATI (continued)	No. of Graduates
* American Eclectic Medical College	10	* Cincinnati Physio-Medical College	2
* Botanico Medical College of Ohio	1	Eclectic Medical Institute	399
* Cincinnati College of Medicine and Surgery	183	* Hygeia Medical College	2
* Cincinnati Medical College	1	* Laura Memorial Woman's Medical College	18

CINCINNATI (continued)	No. of Graduates	COLUMBUS (continued)	No. of Graduates
* Medical College of Ohio	887	College of Medicine of Ohio State University [est. 1914]	
* Medical University of Ohio	2		
* Miami Medical College	400	LEBANON	
Ohio-Miami Medical College of the University of Cincinnati	98	* National Normal University College of Medi- cine	12
* Physio-Eclectic Medical College	10		
* Physio-Medical Institute	19	TOLEDO	
* Presbyterian Hospital and Woman's Medical College	3	Toledo Medical College ¹	177
* Woman's Medical College of Cincinnati	13		
CLEVELAND		HOMEOPATHIC SCHOOLS	
* Cleveland College of Physicians and Surgeons	388	CINCINNATI	
* University of Wooster, Medical Department	104	* Pulte Medical College	138
Western Reserve University, Medical Depart- ment	467		
COLUMBUS		CLEVELAND	
* Columbus Medical College	203	* Cleveland Homeopathic Medical College	186
* Ohio Medical University	417	* Cleveland Medical College, Homeopathic	81
* Starling Medical College	696	* Cleveland University of Medicine and Surgery	243
* Starling-Ohio Medical College	226	COLUMBUS	
		Homeopathic College of Medicine of Ohio State University [est. 1914]	

STATE EDUCATIONAL REPORTS

PERHAPS in no other place—unless it be in the office of the United States Commissioner of Education—are the publications of educational institutions studied and compared so constantly as in the office of the Carnegie Foundation. It is a part of the work of the Foundation to compare the work of institutions and of state systems of education. In my last report I tried to point out the difficulties which arose in such studies from the defects of college catalogues, and their lack of comparability. Similar difficulties are met in the study of the reports issued by the superintendents of education in the various states. Not only do these reports as a rule furnish a meagre basis for comprehending the system of education as it exists in the state itself, but the separate reports afford still smaller basis for comparing the educational system of one state with that of another.

The following study of these reports is therefore presented in the hope that it may be regarded not as a mere fault-finding criticism, but rather that it may suggest constructive action to bring about an improvement of the whole school problem. No state is likely to make the best progress in education until those responsible for the school system have themselves some clear idea of what the schools ought to be, and of how they should be related to one another. One of the first steps toward such a clear conception on the part of the public is to have an educational report from those in charge of the school system which shall itself be clear and simple, and yet set before the public, including the teachers themselves, an adequate conception of the school system, its service, its needs, its direction of growth. It is fairly safe to assume that some such clear description will precede the realization of a well-developed and adequate school system in any given state.

¹ Reported closed in 1914, following withdrawal of recognition by the Ohio State Medical Board.

This paper, therefore, is presented in the interest not only of the public, but of the superintendents of education, of the teachers, and of students of education.

The discussion leads up to such questions as these:

What is the function of the annual (or biennial) report issued by a state department of education? Does the report aim primarily to inform the public, the legislature, or professional teachers?

To accomplish its object, what should it contain, and how should its contents be arranged and presented?

What place should statistics occupy in such a report?

What statistics relating to education are significant and valuable in determining future action?

Is it possible to agree as to what statistics are needed, and to collect and publish them in such form as to make the state reports comparable, so that the experience of one state may be available to another?

Are the tables of statistics now included too bulky?

Should reports be issued in sections to serve different demands and in the interest of economy?

With such conception of the purpose of this study, we turn now to the reports themselves.

The various states require the superintendents of state educational systems to issue annual or biennial reports concerning the condition and progress of the educational systems under their administration. Altho the reports appear regularly at their allotted time, it is difficult from a study of them to arrive at any conclusion as to their function. There is little evidence in most of them of thoughtful effort to consider the purpose to be effected by the reports, the persons to be reached, or the best form of presentation. The reports reflect nothing so much as the strong influence of routine and tradition. That they have not until recently been subjected to criticism may be due as much to their failure to meet any immediate educational need as to their unattractive bulk. And yet, if the state report is to be made a valuable instrument of public education and of educational progress, as it well may be, its improvement will not be secured by disregarding existing conditions and formulating uniform blanks and records.

The typical state reports¹ are badly bound, poorly printed volumes, which in the main are impressive by their size. These defects in themselves may perhaps be taken as some indication of their perfunctory character. The variations in size alone are suggestive. The New York report covers 1170 pages, that of Kentucky 904, Illinois 882, and South Carolina 823. On the other hand, the California report is compassed in 90 pages, the Washington report in 84, the Texas report in 77, and the Wyoming report in 55 pages. That the Kentucky Department of Education requires 900 pages to do what the California Department of Education seeks to accomplish in 90 suggests a wide difference of opinion as to the purpose which the report is meant to

¹ A list of the reports examined is given in the table on page 109.

serve. While differing in detail, the reports show considerable uniformity in content. They open with an introduction, a discussion of what are considered important and pressing questions, and recommendations to the legislature. These introductory sections, proportionately very brief, are usually the only direct contributions made by the superintendent, and are frequently evidences of the skill with which a large number of topics can be crowded into the briefest space. As examples may be mentioned the introduction of the Arizona report, which in eleven pages discusses fifteen different topics; the Iowa report, which in twenty-eight pages deals with thirty-two topics; the Nevada report, with thirty-nine topics treated on twenty-three pages; and the Wyoming report, which dismisses twenty-six topics in half that number of pages.

The superintendent's introduction is accompanied by a detailed statistical exhibit by counties, districts, or other local subdivisions, which takes up more than half the volume. This unwieldy material, discussed later, is sometimes summarized in two or three pages which serve their purpose more successfully.

It is a common practice to reprint either in full or in abstracts the reports from county superintendents. While such reports help to swell the bulk of the volume, and in a very few cases are interesting and helpful, it is doubtful whether, on the whole, their inclusion can be justified. Too frequently these local reports are in themselves severe indictments of the educational qualifications of their authors. It is in any case a bold assumption that all these reports will find readers, and it is a mistaken policy to reprint them verbatim for the sake of the one report that may be read at the place of its origin. Not that the reports do not serve a useful purpose, but the general report should offer a summary indicating their main features.

There is perhaps greater justification for the inclusion of the reports of special officers attached to the state departments of education. Such are the supervisors of special subjects and activities, rural school inspectors, and inspectors of high schools, whose papers, particularly in the southern states, are often valuable contributions to the subject with which they deal. The principals of normal schools and presidents of state institutions also contribute their own reports, which are too often intended to make out a special case for the institution concerned rather than for the promotion of the educational welfare of the state as a whole.

While the inclusion of the separate reports of this character is at least open to argument, the same cannot be said about the large amount of material of another type found in many reports. It is difficult, for example, to justify the inclusion of directories, lists of teachers and superintendents, certification laws, lists of successful candidates, examination regulations and papers, circulars and letters of the state superintendent, addresses, syllabi, and courses of study. These documents are not of sufficiently general interest to warrant inclusion: some of them are purely professional; others merely ephemeral. Finally, not all the reports offer assistance, by way of a good table of contents or index, to the reader who may be interested in some particular problem.

A study of the accompanying table will indicate the general character of the reports

DISTRIBUTION OF MATERIAL IN SUPERINTENDENTS' REPORTS

State	Issue	Year	Pages	Table of Contents	Index	Superintendent's Statement		Statistics	Re-ports of Special Officers	Re-ports of Educational Institutions	County and City Reports	Bulletins, Circulars, Letters	Course of Study	Re-ports of Associations	Examination Papers; Certification Rules
						Pages	Number of Topics								
ALABAMA.....	Annual	1913	415	No	Yes	61	37	275	24	13	42	.....	.....	.....	.....
ARIZONA.....	Biennial	1911-12	23	No	No	11	15	9	.....	.....	.....	.....	.....	.....	.....
ARKANSAS.....	Biennial	1911-12	742	Yes	No	20	14	117	66	40	.....	54 26	386	30	.....
CALIFORNIA.....	Biennial	1911-12	90	Yes	No	5	4	66	.....	.....	.....	.....	.....	.....	.....
COLORADO.....	Biennial	1911-12	272	No	Yes	18	14	72	.....	79	5	38	.....	13	15
CONNECTICUT.....	Biennial	1912-13	589	Yes	Yes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
FLORIDA.....	Biennial	1911-12	501	Yes	Yes	28	General	90	110	68	.....	16	.....	.....	66
GEORGIA.....	Annual	1912	530	Yes	Yes	35	20	266	19	97	15	18	.....	8	17
IDAHO.....	Biennial	1911-12	115	No	No	22	15	17	.....	23	2	.....	.....	.....	.....
ILLINOIS.....	Biennial	1910-12	882	Yes	Yes	60	17	253	94	241	.....	213	.....	.....	.....
INDIANA.....	Biennial	1910-12	685	Yes	Yes	8	9	303	.....	.....	79	184	.....	.....	83
IOWA.....	Biennial	1911-12	389	No	Yes	28	32	245	9	.....	47	.....	.....	.....	16
KANSAS.....	Biennial	1911-12	338	No	Yes	19	10	248	10	40	11	.....	.....	.....	.....
KENTUCKY.....	Biennial	1912-13	904	Yes	No	35	22	221	142	253	.....	54	.....	.....	51
LOUISIANA.....	Biennial	1911-13	481	No	Yes	26	38	295	17	35	19	.....	.....	.....	.....
MAINE.....	Annual	1912	368	Yes	Yes	43	23	293	.....	19	.....	.....	.....	.....	.....
MARYLAND.....	Annual	1912-13	430	Yes	No	5	5	233	.....	34	56	45	.....	40	.....
MASSACHUSETTE.....	Annual	1912-13	445	Yes	Yes	304	General	130	.....	.....	.....	.....	.....	.....	.....
MICHIGAN.....	Annual	1912-13	329	Yes	Yes	7	4	156	.....	10	.....	144	.....	.....	.....
MINNESOTA.....	Biennial	1911-12	262	Yes	Yes	27	17	70	16	68	4	46 20	.....	.....	.....
MISSOURI.....	Annual	1912	483	No	Yes	23	7	149	35	35	16	93	.....	41	68
MONTANA.....	Biennial	1911-12	131	No	No	49	25	30	.....	33	.....	.....	.....	.....	.....
NEBRASKA.....	Biennial	1911-12	731	Yes	Yes	8	17	8	43	21	15	151	213	39	77
NEVADA.....	Biennial	1911-12	117	No	Yes	23	39	27	27	.....	26	.....	.....	10	10
NEW HAMPSHIRE.....	Biennial	1911-12	461	No	Yes	255	17	141	.....	19	.....	14	.....	5	10
NEW JERSEY.....	Annual	1912	896	No	Yes	72	17	655	80	4	53	.....	.....	.....	.....
NEW MEXICO.....	Biennial	1910-12	100	No	No	30	38	18	.....	9	22	5	.....	.....	7
NEW YORK.....	Annual	1913	1170	Yes	Yes	4	.....	622	482	.....	.....	.....	.....	.....	.....
NORTH CAROLINA.....	Biennial	1910-12	470	Yes	Yes	48	51	227	132	20	.....	27	.....	4	.....
NORTH DAKOTA.....	Biennial	1911-12	327	Yes	No	8	8	91	.....	37	1	103	.....	16	28
OHIO.....	Biennial	1912	349	Yes	Yes	.....	.....	280	.....	.....	.....	.....	.....	32	.....
OKLAHOMA.....	Biennial	1911-12	237	No	Yes	19	24	21	29	88	5	46	.....	7	.....
OREGON.....	Biennial	1911-12	108	Yes	No	12	4	59	.....	23	11	.....	.....	.....	.....
PENNSYLVANIA.....	Annual	1912	649	No	Yes	13	16	275	.....	48	288	.....	.....	.....	.....
RHODE ISLAND.....	Annual	1911	362	Yes	No	38	15	40	.....	.....	113	.....	.....	.....	.....
SOUTH CAROLINA.....	Annual	1913	823	Yes	No	27	24	393	83	298	6	103	.....	.....	.....
SOUTH DAKOTA.....	Biennial	1910-12	390	Yes	Yes	11	10	107	79	4	42	54	.....	3	15
TENNESSEE.....	Annual	1912-13	216	No	Yes	6	4	184	.....	.....	7	.....	.....	.....	.....
TEXAS.....	Biennial	1911-12	77	No	No	77	General	.....	.....	.....	.....	.....	.....	.....	.....
UTAH.....	Biennial	1911-12	566	Yes	No	50	21	58	.....	167	3	67	.....	5	71
VERMONT.....	Biennial	1911-12	686	Yes	Yes	72	21	502	.....	12	62	10	.....	.....	.....
VIRGINIA.....	Biennial	1910-12	873	Yes	No	21	16	483	.....	311	.....	6	.....	35	.....
WASHINGTON.....	Biennial	1910-12	84	No	No	11	18	3	16	47	.....	5	.....	8	.....
WEST VIRGINIA.....	Biennial	1910-12	245	Yes	Yes	12	23	99	24	19	55	.....	.....	.....	14
WISCONSIN.....	Biennial	1910-12	187	No	No	1	.....	179	.....	8	.....	.....	.....	.....	.....
WYOMING.....	Biennial	1910-12	65	No	No	13	26	17	.....	.....	13	.....	.....	.....	.....

*The different topics are so scattered throughout the report that it has proved impossible to make a satisfactory analysis.

* Statistics are issued separately.

and their arrangement. Out of forty-six reports only twenty-six are furnished with tables of contents and twenty-eight with indices. However good a report may be, its value is greatly diminished, no matter what its size, if the reader is not furnished with some guidance in using it. More significant still is the number of topics referred to, for in general it would be an exaggeration to say that they are discussed, in the brief compass of the superintendent's statements. It is hardly possible within such limits to attempt any educational propaganda or direction of policy. Some of the topics, it is true, are amplified in the reports of the special officers, but it is to the superintendent that the legislature and the public should look for guidance. The disproportionate amount of space devoted to statistics is so evident as to need no comment. The complete statistical report is clearly a relic of the past, when the statistics in most states were less wieldy and cumbersome than they have become. The great amount of detail now offered hardly repays the trouble of collection. A few reports attempt to summarize the long series of tables, but little progress will be made until the ancillary value of statistics is recognized. At present they are too often made an end in themselves. Nothing would be more helpful for future progress than an agreement among all the states upon a reasonable statistical practice. In order to do this, they must first agree as to what statistics are significant and then collect and publish these statistics in a uniform way. Until some such agreement is made as to what statistics are fruitful, and until they are collected on a uniform plan, the great masses now brought together are not comparable and most of them serve no useful purpose. What statistics are needed? How shall they be collected and published? are two extremely practical questions whose answer will point not only to real progress for the future, but also to economy in time and in printing.

From an educational point of view the reports of the special officers are the most interesting sections of the state reports at present. Approaching the subject as many do with the freshness and enthusiasm of the specialist, they give the most adequate picture of the needs of the present in such matters as the provision of high schools, the reform and readjustment of the high school curriculum, the rural school problem, and the question of the training of teachers. For the superintendent who can view the educational situation of his state as a whole, these reports should be of invaluable assistance, and yet the cases are few where effective use is made of them in the superintendent's statement. Equally independent in character but of considerably less value are the reports of presidents of state institutions. Where there are several normal schools, the spirit of rivalry and competition is far more in evidence than the desire to cooperate in the general interests of the state. The state university reports, when they are not mere reprints of catalogues, devote themselves to a plain statement of the barest and often least interesting facts of progress, such as an increase in the staff or the addition of a building. The competitive spirit is well illustrated by a few quotations from a single report. The president of a normal school claims that "the town of Conway, where the normal school is located, may well be considered the educational,

as well as the geographical center of the state;" the president of the university asserts that "the mountain scenery surrounding the university is charming in variety and beauty," but is outdone by the statement of the superintendent of the state agricultural school that "here nature's dream of an earthly paradise has been fulfilled," while the superintendent of the Deaf Mute Institution enters the lists with the claim that his institution "occupies an ideal location in Little Rock, the Capital City, the State metropolis, almost exactly in the geographical center of the state."

The next feature of importance as measured by the space assignment consists of the reports of county superintendents. With few exceptions these reports are crude and in many cases illiterate—an indictment not only of an educational system which entrusts the destiny of its children to such administration, but also of the state authority that submits such material for publication. "We had a six months term," says one county superintendent, "but our attendance was not as good as we would have liked for it to have been, owing to the fact of a very large cotton crop in the fall of 1911 and the scarcity of labour a good many children were kept out of school through the month of January to pick cotton, and, too, the wet spring we had last year quite a number were cut off from school by the water." Another states that "in presenting this my annual and epistolary report I wish to say that I have nothing startling or revolutionary to report but to say that I feel like we in Shelby County are having a good healthy growth and public sentiment to back it. Being short of funds under our last collection, we have adopted all plans contemplated for further advancement."

Typical of many statements are the following:

"The state normal school has introduced home nursing which will be a superb training for them as teachers and inmates of country homes."

"The Institute seemed to put new life and new ideas into our teachers who went forth fresh from the grindstone to delve with the pupils."

"Everything in the school is system. Everything from rising to retiring bell is done on time. The school is under strict military discipline, but a real system cannot be told about, it must be seen."

"On September 28, 1909, the school opened promptly, this date having been fixed more than a year ago."

"We are like a seed storing up the power of life, and are but waiting for the warm spring sunshine that will come from a year or two of prosperity and from the help that should be coming from state aid and other recommended legislation. In the next few years you may have hope to look to Smith county as one of the best. We are but making the beginning of the building of our educational ship of state. We have lain the lines and have some good, strong ribs in place, but we hope the next session of our state legislature will provide us with an auxiliary mast that will let us build this craft of destiny on a bigger and a better scale. We are hoping that when it is finally launched and goes out to sea on her long voyage through the years to come, she will be sea worthy and well manned, and will bring into the ports of Citizenship, moral fibre and efficiency, the beloved passengers entrusted to her care."

The remaining material, which is distributed under the captions of educational directory, bulletins, and circulars, reports of associations, and examination papers and certification rules, can have but little interest or value for the public or their representatives. Even if its professional value is alleged, its insertion in the report is only calculated to make it inaccessible to those mainly concerned. The usefulness of the material may, however, be questioned on other grounds; the educational directory is not what it purports to be, that is, a guide to the local educational activities and institutions of the state, but a list of names and addresses of persons engaged in education; the bulletins and circulars are frequently nothing more than invitations to attend meetings or to celebrate special days or to join an institute, or other letters that have no permanent value and may be interesting as archives but not as material for a report. All of this material—including reports of county superintendents, of special officers, of institutions—shows the lack of discriminating editorship in the superintendent's office and the absence generally of a clear conception as to what purpose or purposes the report is to serve.

The striking uniformity of the state education reports throughout the country is accounted for by the similarity in the legal requirements imposed on the superintendents. But while the regulations prescribe only the main outlines of the reports, they leave sufficient latitude to the superintendents within these limits to make the reports valuable instruments of public education and for the moulding of public opinion. Of forty-four systems of school laws, thirty-two require the superintendent to render a "brief history of his labours," an account of the "condition of the schools," "a full report of his official acts," or a statement of the "results of inquiries and investigations and facts obtained from school returns." Thirty-nine states furnish ample scope to their educational officers under the caption of "recommendations," "suggestions," or "other matters deemed useful for the improvement of schools." Statistics or statistical tables are definitely prescribed in thirteen states, but similar material is requested under different titles in others; thus "receipts and disbursements of funds," "condition of funds," and "itemized accounts" appear in the laws of thirty states; number and grade of schools in eighteen; census, attendance, enrolment, sex, and age of pupils in twenty; the number of private schools in four; and the condition, number, and value of schoolhouses in six. It is significant that only twelve states refer to the county reports, and that these require only abstracts or facts of interest to be reprinted from them. Finally, fifteen states prescribe the inclusion of reports of state and other educational institutions. A comparison of these requirements with the distribution of material presented in the table indicates at once that the superintendents have emphasized the purely mechanical at the expense of those aspects of education that must be treated with intellectual breadth and vision. Clearly, educational progress at large will depend more on the ability with which the superintendents can present the accounts of the condition of schools and the recommendations than

on the facility with which they can collect statistics which at present, at least, remain undigested and unabsorbed.

Since the legislative prescriptions cannot be regarded as restrictive, the causes of the present defective character of the reports must be sought elsewhere. The reason is probably to be found in the existing methods of appointment, the uncertainty of tenure of the position of state superintendent, and the inadequate salaries paid for positions of such importance. In eleven states the state superintendent is appointed by the governor or State Board of Education, while in the remainder he is nominated and elected by the people. And altho educational qualifications are required in many states, the office of superintendent is primarily political, and election depends on political not educational ability. The uncertainty of tenure is indicated by the fact that in three states the term of office is only for one year, in eighteen states for two years, in two states for three years, in twenty-one states for four years, and in only two states for five or six years. The brevity of the term and the necessity in the majority of states of entering the political campaign are not likely to attract those who are best qualified and desirous of making education their life career. Such conditions neither encourage progress nor secure an official who is likely to depart from the traditions of his office. A professional attitude cannot be developed under such circumstances. The same reasons that affect the status of the superintendent also militate against the establishment of strong permanent staffs in the education departments, to serve as the educational advisers of the administrative officer. No greater single reform can be made in the educational system of the various states than to recognize the importance of the position of the head of the school system. To be Superintendent of Education, or Commissioner of Education, as it is termed in some states, is to undertake one of the most important callings upon which an American can enter. It is a place more important than that of president of the state university, in some states more important than that of governor. To give to these great positions their right dignity, to remove them from politics and to offer fitting salaries, would cause them to attract the ablest minds. The state which does this makes the first and longest step toward the development of a well-considered, practical, and progressive system of public education.

For the student of education it is difficult to predict what he may or may not find in the olla podrida included in these reports. He cannot, for example, hope to obtain a clear presentation of the work of the department of education, nor a comprehensive picture of the condition and work of the schools of the states. If he has the time and skill, he may develop a partial quantitative picture by a study of the statistics whose value is discussed below. The questions on which he will in all probability find the greatest amount of information depend on the fashion of the moment. At present much light may be obtained on the rural school question in its different phases,—the securing of better buildings and equipment, consolidation and transportation, the need of better teachers, the demand for improved methods of supervision and stand-

ardizing of schools, the introduction of special subjects,—agriculture, gardening, and domestic science,—the need of better relations between the school and the community, and so on. Related to all this is the pressing necessity of training teachers for the rural schools. Accordingly much information is forthcoming on the recently established high school training classes. The organization and broadening of the curriculum and the standardizing of high schools are also subjects that receive much attention. Other matters on which information is furnished are state aid to schools and the training of teachers in service (thru reading circles and institutes). The selection of topics, however, is capricious, and naturally what is considered important in one state does not always receive the same treatment in another. The presentation of topics, also, is unsatisfactory. The same topic may be dealt with in three or four parts of a report—this is especially true of the rural school question. The reader is accordingly compelled, in a great many cases, to reconstruct the reports for himself, to piece together such information as he can find on any topic from the superintendent's introduction, from the report of a special supervisor or inspector, from the county superintendent's reports, and finally from the statistics. In any case the range of topics is not broad nor evenly distributed.

Considered from the point of view of content, the reports are thus overburdened with a great deal of matter for which even the most sanguine superintendent cannot hope to find readers. As it stands, this material is too diversified and poorly arranged, and gives no evidence of logical conception of purpose. The introduction of so many undigested and unrelated topics, thrown together in a haphazard fashion, cannot but lead to the conclusion that the rendering of the report is regarded as perfunctory even by its sponsor. There is an utter absence of homogeneity and balance in the majority of the reports, and because of this defect they must fail to carry the conviction that is carried by a well-edited, well-digested report informed with a single definite policy and giving a general view of the situation and its needs. The superintendent as the responsible educational head of his state should interpret and consolidate the reports of his assistant officers, of the county superintendents, of the normal school and college presidents. The reports should be what they purport to be,—accounts of the educational conditions in the state,—and not a record of the activities of the superintendent, nor a conglomeration of reports obtained here and there, nor again a general receptacle for the odds and ends that have accumulated during the year. One can readily see that in most cases the superintendents do not have clerical facilities or expert assistance sufficient to enable them to perform any part of their duties adequately. A study of reports, just as a study of educational surveys, leads to the conclusion that the superintendent has not the time each year, in addition to his general administrative and supervisory work, to devote to a thorough digest and presentation of the educational conditions of his state. It is not that material is lacking; but there seems to be little conception of the function that a school report should perform.

A few of the reports indicate briefly what the purpose underlying their publication is. Thus, among the functions of the superintendent of public instruction in Illinois are "the collection of data and facts concerning the revenues, organization, and administration of public education and the systematizing and publishing of these facts and data for the inspection of the taxpayers, citizens, and patrons of the schools, but more particularly for the information of the members of the General Assembly." The Biennial Report of the Department of Public Instruction of Wisconsin consists only of statistics, prefaced by the statement that "Somewhat lengthy statements were prepared for this volume by members of the department, showing the growth and conditions of education in its various departments in the state, together with suggestions for development and improvement. It became necessary, however, to eliminate such statements in order to reduce the volume to two hundred pages, that being the maximum amount permitted under a recent enactment of the legislature. It was deemed best to eliminate discussion rather than statistics." A similar conclusion, although for different reasons, was reached by the Ohio superintendent, who writes: "It has been the custom for the Annual Report of the State Commissioner of Common Schools to include articles on certain subjects of interest to the schools. This method has been found too cumbersome and expensive. Very often the whole Annual Report is called for when in reality only a two page article in the front of the book is wanted. This makes it expensive to the state and expensive to this office to pay the postage and express. For the present the Annual Report will include only statistics and as articles are needed they will be published from time to time in pamphlet form, thereby facilitating their distribution,"—a significant statement in many ways. But it is begging the question to claim that a sheaf of statistics is an adequate exposition to the public or even that part of the public especially concerned—the members of the legislature—of the prevailing educational conditions; the art of statistical representation has not yet been sufficiently perfected to take the place of "pen pictures," as one superintendent (Virginia) claims. Statistics must undoubtedly play an important part in educational administration, but it is not apparent from the reports that they are employed for purposes of administrative control. Thus they are not used, as they should be used if the chief value is to be obtained from them, to support recommendations to the legislature or to illuminate an existing situation. A few reports furnish in addition to a brief summary some explanatory comment, but as a general rule it is difficult to justify the publication of the great mass of undigested figures in as much detail as is now usual.

It is not sufficient for a report to be merely a record. Education is a public service, and progress without public support is impossible. Hence the report should express the needs clearly enough for every member of the public to understand; a mere recommendation without evidence of need is inadequate; a collection of figures without interpretation is also inadequate. The superintendent should regard his report not as a record only, important as this is, but as a means to educate his public on whose confidence and coöperation his successful administration depends. His position is

something higher than that of an agent; he should feel himself responsible for the educational progress and welfare of his state.

Of the reports studied only three meet this requirement satisfactorily,—the Report of the Massachusetts Board of Education, the Report of the Superintendent of Public Instruction of New Hampshire, and the Report of the State Department of Education of Texas. The aim in the first two of these reports is to concentrate public attention on a few important points on which progress—administrative or legislative—is required. The policies are boldly argued and justified, and brief statistical tables are used to support the discussion. But while successful in these points, neither of these reports gives any but a statistical survey of the work of the year in every department of educational activity. The Texas report is somewhat different in character. It is the only report that attempts to give a clear account of all the educational activities of the state in all their branches. A presentation of the “Progress of Two Years and Study of Present Conditions” is followed by an account of the work of the different administrative units of the state, and a brief summary of the recommendations with references to the pages in the volume where they are more fully discussed. The report lacks a table of contents and an index. The complete statistics are published in a separate volume.

A wholly satisfactory statement of the function of an annual report is given by the Superintendent of Public Instruction of Indiana: “The people of the state have a right to know what has been done in the schools, what is being done, and what work is planned. . . . The report is not merely for information; it is also for instruction. It should not only let the people know what has been done, but it should also help mould public opinion, and suggest to the public what ought to be done in the schools.”

It will be generally agreed that the purpose of the report should be to enlighten and educate the public. Hence the presentation ought to be clear, simple, and orderly—an ideal as yet attained by but few reports. The report should not be encumbered by material that should either be kept for reference in the office of the superintendent or be issued in separate pamphlets to those specially interested. Uniformity of arrangement year after year, and particularly uniformity throughout the country, would be a great step in advance in educating the public. The reports attempt to satisfy too many demands—public, legislative, professional, and so on. Greater success would attend them if they addressed themselves to one audience only. The report is a public document, and should be intended for the consumption of the public. Special pamphlets might be issued for members of the legislature, or for members of the educational profession.

Such being the function of a report, what should be its content? It is clear in the first place that the separate reports of assistants, county superintendents, and presidents of normal schools and colleges should be eliminated, and that the report should be issued as a unified and harmonious synthesis of all these made by the superintendent. It is equally evident that no room can be found in such a report for directories and

lists of teachers or superintendents or certificate holders, or for circulars and letters issued during the year by the superintendent, or for examination regulations, or for syllabi and courses of study. Each of these topics of information has to serve its own purpose and should be published separately. Some do not need or merit republication. The report should serve general, not specialized interests. The report should serve as a guide to all the educational activities of the state, well arranged and coördinated. It should be possible for the general reader to learn not only what is being done, but what the educational opportunities of the state are. The record should be followed by the discussion of such special problems as may arise from year to year. A statement of the needs should be made on the basis of both theoretical and practical arguments. Room should be found for a statistical presentation, but this should also be used by way of illustration or argument. In addition to such figures as are employed here, a clearly organized summary in a few pages would serve the purpose of publicity far better than the hundreds of pages giving statistics for every hamlet in the state. These details, again, should be accessible, and if necessary should be published separately, but a distinction must be drawn between that which the public can assimilate and the needs of the administrative specialist. Finally, it would be advisable to give a list of the statutes and regulations governing the educational system of the state, with a reference to their accessibility, a list of important topics treated in earlier reports, and of the educational publications of the year. If the great amount of material which is now found in reports were discarded, a satisfactory report could be issued within the limits of one or two hundred pages. But the preparation of such a report would need the care of a specialist who can see the educational system of a state as a whole; it could not be prepared in odd moments by a busy administrative official by merely putting together the contents of a few drawers.

It is difficult to point to any report that meets all these requirements. Probably the most satisfactory is the Report of the State Department of Education of Texas, which is well proportioned and comprehensive within the limits of seventy-seven pages. The report presents a general summary issued by the superintendent. It is not overloaded by subsidiary reports or extraneous material that is of little interest to the public and of little value to the profession. Of statistics just so much is given as is essential to furnish a quantitative background for the report, the figures being shown for two biennial periods. Those who are further interested in the educational statistics of the state are referred to the separate volume in which they are published. Another striking report is that of the Commissioner of Education for Massachusetts, but while it deals exhaustively and incisively with several problems of importance and their solution, it does not present a comprehensive view of the work of the year other than that which can be obtained from a study of the statistical report. It has, of course, the great advantage of concentrating public attention on the most pressing and immediate needs in the educational progress of the state. In this connection the reports of the English Board of Education may be referred to. It has become the practice in re-

cent years to devote the opening chapter of these reports to a discussion of some general topic of historical or administrative interest. This study is followed by a statement of the work of the year in each of the chief important branches of education, including sometimes the report of some special enquiry or a discussion of recommendations for future progress. The general report gives only so much statistical detail as is necessary for an explanation or interpretation of the text, the more complete educational and financial statistics being issued separately in two large volumes. In the appendices reference is made to special legislation of the year, educational publications of the Board, and to topics more adequately discussed elsewhere. What can be accomplished for an educational system that provides for some six or seven millions of scholars under three hundred and fifty local education authorities is not a task that should prove insuperable in the average state of this country. In a democracy such as this, however, educational reporting will be improved only when it is realized more fully than is now done that educational progress depends not merely on the development of high professional standards, but also on public coöperation, which in turn can be secured only by intelligent education of the public, one of the chief functions of the educational report.

EDUCATIONAL SURVEYS¹

EDUCATION has been the subject of scientific study for but little more than a generation, and yet there is no field in which it is more important to have authoritative and thorough investigation of fundamental facts and principles, with consequent criticism of existing conditions and authoritative recommendation for their improvement. No other subject touches life on so many sides or includes such a wealth of varied material. Education is as fundamental as the family, business, government, or religion. Its social, economic, political, ethical, and moral aspects all need further study. Its relations to hygiene, aesthetics, industry, and philanthropy all need illumination. Now that we are convinced that the welfare of the future depends, to a great degree, upon the education of the present, the consequent sense of responsibility is enormous. For education must somehow meet the need of being well grounded in both the past and the present, in both philosophy and science, in both intellect and morals. It must be at the same time mind and matter, abstract and concrete, ideal and practical.

The obvious solution of the problem that is adopted by many other nations, namely, that of systematic organization and centralized control, is impossible under our political and social traditions. Local responsibility, variation, initiative, and experiment are peculiarly our rule in education. There is, however, an ever widening and more serious demand for authoritative records of what has been and is being done, and for more and more comprehensive and competent educational criticism and construction. The desire is making itself felt for a better adjustment between the new

¹ Based on a study of some thirty surveys.

demands that society is placing on the schools and the new standards for the measurement of educational and administrative efficiency that have recently appeared. The demand for investigation is not so much for the purpose of securing criticism of the old as for gathering suggestions and direction for the next step in progress. The increasing frequency of educational surveys is one of the most significant responses to this demand, and it is significant, too, to note that the surveys have been prompted in most cases by public rather than by professional or technical interest in education. In other words, the interest is not academic or scientific; the stimulus comes rather from a desire to discover whether the fullest possibilities of the situation are being met by the educational organization and its officers. More than thirty such surveys have been made in the United States within the last few years, and there is every indication that some such scheme of educational enquiry will become a permanent feature of American education. The large number is evidence of an educational need perhaps originating out of local conditions, perhaps merely the result of a prevailing fashion. It is probably too early to judge of the ultimate usefulness of such studies, tho present indications show that their immediate effectiveness has in fact been limited. The surveys present little uniformity in scope or methods of investigation, arrangement, or presentation, but out of the general confusion there is gradually being crystallized a conception of the possibilities of the survey, comparable methods in education are being established, and the more immediate needs of the present are being formulated. Whatever the immediate influences may be, therefore, the total result represents a valuable contribution to educational thought in so far as it offers a conspectus and summary of current educational ideas. In some cases the problems discussed have been purely local, in others new points of view in educational administration have been applied to the situation as a whole. In general an absence of comprehensiveness has been accompanied by a failure to appreciate the importance of the task, which in turn has led to rapid and ill-considered reports dealing only with the superficial and objective on the basis of uniform records and questions. From the present indications it would be hazardous to infer, and dangerous for general educational welfare to suppose, that educational control and advice will become concentrated in the hands of a few experts, and much will have been gained if the need for the critical habit of mind becomes part of the educational routine. More important than the occasional survey is constant study of and familiarity with progress in contemporary educational thought on the part of those charged with the conduct of the schools.

These reports have added nothing radical to educational thought or literature; in a large measure they summarize what has been in the minds of educational leaders for the last decade; their constructive suggestions are in the main of a character with which the professional administrator should be familiar. A comparison of recent reports with that of the Chicago Commission published in 1899 affords convincing proof that in educational theory at any rate the advance has not been great, and that the progress has been made rather in improving the mechanics of administration.

A study of the surveys raises some important questions, and not the least pertinent of these is whether a profitable educational survey can be made before some definite conception is formulated of the aims and ends of education and the ideals to be achieved. It is, no doubt, fortunate for educational progress that fixed and permanent aims of education cannot be formulated, but there must be in each generation some consciousness of the goal to be reached. On this point the surveys are in most cases silent. And yet an investigation becomes nothing more than a record of fact, which can more easily be gleaned from annual reports, if it confines itself to a relation of present achievement, while the resulting recommendations, if they are not related to some aim, lose their point. For it will, in general, be agreed that the work underlying a survey should be threefold: The history of the system surveyed should be considered, for, as the Baltimore Commission recognized, "with reference to any school system the important thing is not so much the question, what is its present status, as the question, is it moving in the right direction?" Secondly, education is only a part of public service and as such cannot be estimated without reference to prevailing economic, political, and sociological conditions, each of which contributes to the formulation of educational needs. And finally, the constructive suggestions proposed should point a way not too far removed from present conditions as affected by the factors mentioned. The neglect of these principles has led to investigations which, in an attempt to evaluate school systems in as brief a time as possible, have resulted in suggestions dealing mainly with such objective matters as school buildings and school records.

Not only has there been no agreement as to the ends of education, but the standards of measurements are equally indefinite. In the New York report Professor Hanus admits that "there are very few established standards whereby the efficiency of educational activities can be measured, and that accepted methods of studying such activities are, for the most part, yet to be found;" and again, that "there are as yet no universally accepted standards whereby the adequacy of educational aims and practices can be judged." The standards of measurements employed in the surveys were based on personal or collective judgments, on the interpretation of statistics, and on comparison with other systems throughout the country. The first method at once leads to serious criticism, for the opinions and judgments of others can always be arrayed in opposition. Statistical measurements have been frequently employed, especially in relation to attendance, retardation, and elimination of pupils, factors which it may be worth while to know, but which help only slightly to estimate the true worth or to define ultimate functions of education. Retardation and elimination are the results of many causes, and to that extent serve only slightly to measure the quality of school work. Indeed, one investigator, on finding too many promotions (in Montclair), drew attention to this fact as strongly as other educators did to retardation. There is, in fact, some danger that the faith in statistics may overshadow the main purpose of the school,—the education of the pupils. The tendency to neglect

the product by all-absorbing attention to the process is too marked at present to be overlooked.

So, too, with the comparative method, which, tho it may have its value, does not give a measure of the essentials or establish guiding principles. This method takes no account of differences between the towns or systems compared, or of the many factors that influence education. It assumes, for example, that there is a definite correlation between expenditure and educational results, and measures the value of a school system in terms of its expenditure. The difficulties that beset this method may also be estimated from the experience of the Boston committee in its attempt to compare its own system with those of other cities: "The school authorities either would not or could not furnish the data for a longer period; in fact, it was only by the most persistent endeavors that the data even for one year were finally obtained;" and again, "Before final conclusions are drawn from statistical tables hereto annexed, a word should be said regarding the danger of reading such statistics without recognizing the inevitable lack of absolute comparability of certain items of school data."

The fact that the standards and methods of measurement employed in making the surveys have been somewhat vague and indefinite stimulates another line of enquiry. Is there in fact a body of knowledge concerning education and educational administration comparable to the sciences of medicine and engineering? In any of the latter sciences there are certain minima with which the practitioner in each of the professions is presumed to be familiar; from these there is always an appeal to the specialist or expert. Whatever the failings of the surveys may be, they bring out forcibly that there is a body of knowledge which we may call a science or art of education, and that in many cases there is evidence that the superintendents in the field have not availed themselves of it. The administrator of educational affairs is not yet professional in the sense that he is master of a definite science from which he derives principles of guidance for his work. If the surveys prove anything, they show clearly that the administration of education has been empirical and routine rather than scientific. It is possible to find some explanation for this situation. Superintendencies have for too long a time been the shuttlecocks of politics, a fact which must limit the number and the type of men available, however attractive the salaries may be. Professional training for the field of administration has not been established long enough to exercise any great influence throughout the country, even if the element of politics were withdrawn. Further, it cannot be denied that the ordinary superintendent is, as a rule, overwhelmed by his multifarious duties, many of which are sufficiently mechanical to be entrusted to a low-salaried clerk. The consequence is an immersion in the petty details of a particular situation without time either to take a detached general view or to keep abreast of professional progress and contributions. From another standpoint the superintendent of education has a difficult position, since he is responsible to a public which in education is more exacting than in any other field of public service. The public is naturally and fortunately in-

terested in education both for its own collective welfare and thru the children for the welfare of the individual. Every citizen, since he has been thru the schools on the one hand and feels the need to be realized on the other, regards himself as a competent judge and critic in educational affairs. What should be the nature of this partnership between the public and the educational administrator? Undoubtedly it is for the public to make effective its demands for a high standard of results from the educational process; it is for the professional servants not only to create these demands, but to be adequately trained in the best methods of meeting them. The educational administrator is accordingly responsible to the public for the best professional service. How, then, is he to perform this service and yet keep in touch with the progress in the science of his profession?

The American system of education does not provide a central authority, such as exists in England and in the German states, which brings the educator into touch with the capitalized educational achievements of each year. A suggestive departure has been made recently in the appointment of an educational expert in New Orleans and in the establishment of the Division of Reference and Research in New York City. The introduction of the expert as an associate of the administrative officer will serve to mediate between the practical and pressing needs of an educational system and the contemporary scientific contributions that accumulate in education. It may be objected that at present such experts are not to be found, that they are few in number, or that they are narrowly specialized in such branches as psychology, statistics, elementary, secondary, or vocational education. But it must be remembered that as things are, the superintendent of education is expected to combine all these branches with administrative ability, and, further, that in recent years the tendency has been to provide expert assistance to the superintendent in school architecture and business management. The demands for the expert educational officer to take charge of the intelligence department will certainly stimulate a supply. The presence of the expert may save a system from degenerating into stereotyped and mechanical routine. The expert, possessing the larger educational view, may be expected to preserve that detachment and scientific attitude which the administrator, immersed in the immediate demands of his office, apparently cannot maintain. The office of the expert, again, will provide for a continuous survey without the necessity of waiting until a system gets out of gear to such an extent that the expert from without must be called in. Nor would such a practice exclude the possibility of periodic investigations by external specialists, as is suggested in the reports of the Chicago and Baltimore commissions. The periodic survey at intervals of ten years, perhaps, would take the place of the system of government inspections in England and Germany, and would help to break down the comparative isolation and actual autonomy prevailing in this country.

The value of the recent educational surveys lies, then, not so much in their actual contributions as in the suggestions to which they give rise. The fact that the majority of these were stimulated by public demand, directly or indirectly, is an indica-

tion that the public, which is interested not merely as the source of financial support, but also as the source of the raw material of education, requires from time to time some more definite account of educational conditions than can be found in the frequently unreadable annual reports. And, indeed, it is well that such public interest should be ever present and insistent, for an enlightened public means a progressive school system. But it is not equally clear that the public is the best judge of the work of the educational administrator, as is maintained by some. Such work should be subject to the criticism of the professional expert, and if the administrator has constantly by his side the assistance of such an expert, the public may have a better guarantee that educational efficiency and progress are not sacrificed, thru lack of information, to the deadening influence of routine. The surveys have not only emphasized the importance of public interest, but have demonstrated the need of constant and continuous self-examination.

It may be added that the recent study of the educational system of Vermont made by the Carnegie Foundation differs in some important respects from most educational surveys. In the first place it does not attempt an exhaustive study of individual schools, such as is made, for example, in the admirable studies of the English counties by Dr. Michael Sadler. Such studies are intended to be intensive.

The enquiry into Vermont education had a different purpose. It undertook to deal with the fundamental educational policy of the state—the form of educational organization, the attitude of the school system toward industry and the life of the people, and the reforming of the school system in accordance with a more modern conception of its duties. Its chief purpose was constructive, but constructive rather in changing the direction of educational progress than in fixing its details. Its recommendations for this constructive program were based upon the theory that if the school system were rightly organized, pointed in the right way, and directed by competent persons, the details of administration and of instruction would be best worked out by those on the ground. The plan which was presented, therefore, in this report, dealt mainly with the fundamental problems of organization, finance, and a sound educational policy.

HENRY S. PRITCHETT.

October 15, 1914.

PART III
DE MORTUIS

DE MORTUIS

WILLIAM WHITMAN BAILEY

WILLIAM WHITMAN BAILEY was born on February 22, 1843, at West Point, where for nineteen years his father was a member of the faculty of the United States Military Academy. He entered Brown University in 1860, but left in 1862 to enlist in the Tenth Regiment of Rhode Island Volunteers, where he served for two years. He afterwards graduated at Brown University, receiving the degree of bachelor of philosophy. In 1866 he became assistant in chemistry at the Massachusetts Institute of Technology, leaving there in 1867 to accompany the United States Geological Expedition to the 40th parallel as botanist. Upon his return to Rhode Island he was appointed Deputy Secretary of State, and from 1869 to 1871 was assistant librarian at the Providence Athenaeum. While on a long visit to New York he occupied himself in newspaper work, being for some time employed as an editorial writer on the *Tribune*. Returning to Providence in 1875, he began to concentrate his attention upon the science of botany, taking special courses at Harvard University. He was appointed instructor in botany at Brown University in 1877 and professor in 1881, which position he held until 1906. In 1893 Brown University honored him with the degree of master of arts, and in 1900 he received the degree of doctor of laws from the University of New Brunswick.

Among Professor Bailey's best known works are *Botanical Collector's Hand Book* (1881); *Among Rhode Island Wild Flowers* (1895); *New England Wild Flowers* (1897); *Botanical Note Book*; *Botanizing* (1899). He wrote extensively both in prose and verse for magazines and newspapers. He was a member of the International Society of Botanists, the New England Botany Club, the Rhode Island Horticultural Society, and was a councillor of the Agassiz Association.

The Carnegie Foundation, in appreciation of Professor Bailey's long and distinguished service, granted to him on June 21, 1906, a retiring allowance. He died on February 20, 1914.

CHARLES WILLIAM BENTON

CHARLES WILLIAM BENTON was born on January 19, 1852, at Tolland, Connecticut. He received his preparatory education at Beirut, Syria, and entered Yale in 1870. After graduation he was for some years engaged in public school work, and in 1880 was appointed professor of the French language and literature and head of the department of Romance languages at the University of Minnesota. He received the degree of master of arts from Yale in 1874, and the degree of doctor of literature from the Western University of Pennsylvania in 1897. He spoke six languages and read and wrote fifteen languages.

He was the author of *Golden Ages of Literature, Dante* (1899); the editor of *Easy French Plays for School Use* (1900); and a contributor to the *Minnesota Magazine*.

Upon the nomination of the board of regents of the University of Minnesota, the Carnegie Foundation, on October 30, 1913, granted to Professor Benton a retiring allowance. He died on November 11, 1913.

ST. GEORGE TUCKER BROOKE

ST. GEORGE TUCKER BROOKE was born on July 22, 1844, at the University of Virginia, where his maternal grandfather was professor of law. He received his early education at Richmond and Winchester, and at the age of eighteen he enlisted as a private with the Second Virginia Cavalry, being thrice wounded. After the war he studied law at the University of Virginia, graduating in 1869. For several years thereafter he practised law at Charles Town, West Virginia, and in 1878 was appointed to the first professorship of law at the newly established college of law of West Virginia University.

He was the author of *Common Law Practice and Pleading for West Virginia*, and he also published many magazine articles. He was a member of the Virginia Historical Society and of the West Virginia Bar Association.

The Carnegie Foundation, in recognition of the long and valuable service of Professor Brooke, granted him a retiring allowance on June 4, 1909. He died at Washington on May 16, 1914.

CHESTER CICERO COLE

CHESTER CICERO COLE was born in Oxford, New York, on June 4, 1824. He received his early education in the public school and academy of his native town, and in 1846 matriculated at the Harvard Law School, where he took the degree of bachelor of laws in 1848. After being admitted to the bar, he practised law in Kentucky for nine years and then moved to Des Moines, Iowa. In 1864 the governor of Iowa appointed him one of the justices of the supreme court, a position which he held until 1876. In 1865 he and an associate organized a law school at Des Moines, which proved so successful that the regents of the State University of Iowa merged the school with the law department of the university, located at Iowa City. Judge Cole was a professor in the school until 1875, when, at the solicitation of many leading citizens of Des Moines, he established another law school called the Iowa College of Law. After six years of successful existence this school in turn became the law department of Drake University, Judge Cole being a teacher there from 1881 until his retirement in 1906. For fifteen years of that period he served as dean of the department.

He was the editor of the *Western Jurist*, a legal monthly, from 1866 to 1881, and also edited an annotated edition of the Iowa Supreme Court Reports (twelve volumes).

The Carnegie Foundation, in recognition of Judge Cole's long and valuable service to legal education in Iowa, on January 5, 1907, granted to him a retiring allowance. He died October 4, 1913.

MILLARD LEWIS LIPSCOMB

MILLARD LEWIS LIPSCOMB was born on May 17, 1850, in King William County, Virginia. He received his early education in Virginia schools, and was a graduate of Bethany College. In 1874 he was appointed assistant professor at the college of William and Mary. He taught in Kentucky colleges from 1879 until 1889, when he was appointed professor of physics at the University of Missouri. He served that institution until his retirement in 1910.

Upon the nomination of the board of curators of the University of Missouri, the Carnegie Foundation, on May 5, 1910, granted to Professor Lipscomb a retiring allowance. He died April 8, 1914.

SILAS MARCUS MACVANE

SILAS MARCUS MACVANE was born on June 4, 1842, at Bothwell, Prince Edward Island. After graduating at Acadia College, Nova Scotia, in 1865, he spent the following six years in teaching and in travel and study abroad, and in 1871 he was admitted to the junior class at Harvard College. Immediately after graduation he began teaching in the Roxbury Latin School, where he remained two years. In 1875 he was appointed instructor in political economy in Harvard College. After three years he was transferred to an instructorship in history, from which he was promoted to an assistant professorship in 1886. In 1887 he was made McLean Professor of ancient and modern history, which position he held continuously for thirty-six years. He retired in 1911, and lived with his family in Rome until his death.

Among his published writings are *The Working Principles of Political Economy, a Book for Beginners*; a translation and revision of Seignobos's *Political History of Europe since 1814*; a review of the report of the Venezuela Boundary Commission, printed in the *Review* of the American Historical Society; an article on the Austrian Theory of Value, published in the *Annals* of the American Academy of Political and Social Science; and frequent contributions to the *Quarterly Journal of Economics*.

Upon the recommendation of the President and Fellows of Harvard University, the Carnegie Foundation, on October 19, 1911, awarded Professor Macvane a retiring allowance. He died January 19, 1914.

HELEN CLARISSA MORGAN

HELEN CLARISSA MORGAN was born in 1845. She graduated from Oberlin College in 1866, receiving the degree of bachelor of arts, and in 1911 that college conferred upon her the honorary degree of master of arts. Upon graduation she taught for three years in Michigan, and in 1869 was called to Nashville to teach in Fisk University, which was then located in the Federal Hospital Buildings. Altho she received a call to teach at Vassar College, she chose to devote her life to work among the colored race, and remained at Fisk University for thirty-eight years. She was the first woman to be appointed professor of Latin in a coeducational college.

On account of her long and faithful service the Carnegie Foundation, on June 7, 1907, voted to Professor Morgan a retiring allowance. She died on May 23, 1914.

CHARLES FRANCIS OSBORNE

CHARLES FRANCIS OSBORNE was born at Burlington, New Jersey, in 1855. He was educated in private schools in New York, and received his professional training in architecture under Vaux and Withers of New York, who were then among the foremost of American architects. In 1880 he became an instructor in architecture at Cornell University, and the following year was promoted to the rank of assistant professor. In 1892 he was again promoted, receiving the rank of associate professor. He resigned this position in 1898 and went to Philadelphia, where he was engaged in professional work until 1900, when he accepted an instructorship in architecture at the University of Pennsylvania. At this institution he served for thirteen years, having been raised to the rank of assistant professor and then of professor of the history of architecture.

Professor Osborne was at one time editor of the *American Architect* and also of *The House and Garden*. In 1910 he published a book entitled *The Family House*.

On the nomination of the board of trustees of the University of Pennsylvania, the Carnegie Foundation, on December 19, 1913, voted to Professor Osborne a retiring allowance. He died on December 23, 1913.

RUFUS BYAM RICHARDSON

RUFUS BYAM RICHARDSON was born on April 18, 1845, at Westford, Massachusetts. After finishing his preparatory course at Lawrence Academy, Groton, Massachusetts, he enlisted in Company B of the Sixth Massachusetts Infantry in 1862, serving for a year. He graduated from Yale University in 1869 and entered the Yale Divinity School, where he remained until 1872. He then went abroad for study for two years, and on his return to New Haven became tutor in Greek at Yale University.

From 1880 to 1882 he was professor of Greek in Indiana University, and then for eleven years was professor of Greek at Dartmouth College. Following this, from 1893 to 1903, he served as director of the American School of Classical Studies at Athens, conducting the excavations at Eretria and at Corinth. Returning to America, he spent the remaining years until his retirement at Dartmouth and other colleges lecturing on archaeology. He received the degree of doctor of philosophy from Yale in 1878.

Professor Richardson was the author of *Vacation Days in Greece* (1903); *Greece through the Stereoscope* (1907); and *A History of Greek Sculpture* (1910). He also contributed to the *Century*, to *Scribners*, and to the *American Journal of Archaeology* many articles, chiefly regarding the excavations of the American School at Athens. He was a member of the American Academy of Arts and Sciences, the British Society for the Promotion of Hellenic Studies, the Archaeological Society of Germany, and the Archaeological Institute of Austria.

The Carnegie Foundation, in recognition of the distinguished service of Professor Richardson, granted to him on March 28, 1907, a retiring allowance. He died on March 10, 1914.

MARY JANE TOOMER SAUNDERS

MARY JANE TOOMER SAUNDERS was born on February 15, 1830, in Portsmouth, Virginia. After studying in the schools of her native town she attended the Wesleyan College for Women in Wilmington, Delaware, where she graduated in 1848. From that time until her retirement she was engaged in teaching, interrupted only by occasional periods of study in Germany and France. After several years of teaching in schools for girls in the southern states, she spent two years, 1867-69, as the head of an institution in Berlin for the training of American girls. Upon her return to this country she and her husband established a college for women at Norfolk, Virginia, where she remained for twenty-one years. In 1895 she was appointed professor of modern languages at Randolph-Macon Woman's College, where she remained until her retirement in 1907.

The Carnegie Foundation, in appreciation of Mrs. Saunders's long and admirable service, granted her on June 7, 1907, a retiring allowance. She died in Cambridge, Massachusetts, on July 23, 1914.

FRANCIS HUMPHREYS STORER

FRANCIS HUMPHREYS STORER was born in Boston on March 27, 1832. He studied at the Lawrence Scientific School of Harvard University, and received the degree of bachelor of science in 1855. He then studied abroad for two years, and on his re-

turn to Boston practised as a chemist until 1865, when he was made professor of general and industrial chemistry at the Massachusetts Institute of Technology, remaining there until 1870. Resigning this position, he accepted the professorship of agricultural chemistry at the Bussey Institution of Harvard University, which position he held until his retirement in 1907. He was dean of the Institution for thirty-six years. He received the honorary degree of master of arts from Harvard in 1870.

Professor Storer was the author of many notable scientific works, including *Dictionary of the Solubilities of Chemical Substances*; *Manual of Inorganic Chemistry*, and *Manual of Qualitative Chemical Analysis*, both in coöperation with Dr. Charles W. Eliot; *Agriculture in Some of its Relations with Chemistry*; *Bulletin of Bussey Institution*; and *Manufacture of Paraffin-Oils*. He was a fellow of the American Academy of Arts and Sciences.

Upon the nomination of the president and Fellows of Harvard University, the Carnegie Foundation, on July 9, 1907, granted Professor Storer a retiring allowance. He died on July 30, 1914.

FRANCES A. WOOD

FRANCES A. WOOD was born on November 7, 1840, at Adams, Massachusetts, and studied and afterwards taught in Maplewood Seminary, Pittsfield, Massachusetts. She was called to Vassar College in 1866 as a teacher of music, and in 1870 was transferred to the department of English as instructor. In 1880 she became librarian, a position which she held for thirty years. During that time she also rendered the college valuable service in filling other important posts, having been appointed acting lady principal for the year 1889-90.

Upon the nomination of the board of trustees of Vassar College, the Carnegie Foundation, on May 5, 1910, voted to Miss Wood a retiring allowance. She died on June 17, 1914.

CALVIN MILTON WOODWARD

CALVIN MILTON WOODWARD was born at Fitchburg, Massachusetts, on August 25, 1837. He graduated from Harvard in 1860, and in 1865 went to Washington University as vice-principal of the academic department. In 1867 he became instructor in mathematics in the collegiate department, and in 1868, with the authorization of the Corporation of the University, he began the organization of the engineering department. In 1870 he was advanced to the position of Thayer Professor of Mathematics and Applied Mechanics, and was for many years dean of the engineering faculty. In 1880 he became director of the Manual Training School which he had organized, and which was an educational innovation not only for St. Louis but for America. In 1883 Washington University conferred upon him the degree of doctor of philosophy, and

in 1905 the degree of doctor of laws. In 1908 the University of Wisconsin also honored him with the degree of doctor of laws. At his retirement in 1910 he had been connected with Washington University for forty-five years.

Professor Woodward's services as an author included his *History of the St. Louis Bridge*, written at the request of Mr. James B. Eads, the constructor of the bridge; two volumes on *Manual Training*; *Applied Mechanics for Engineering and Architectural Students*; and numerous papers on mathematical and mechanical subjects. He was for four years president of the board of curators of the University of Missouri, and was at different times president of the Society for the Promotion of Engineering Education, president of the American Association for the Advancement of Science, and president of the North Central Association of Colleges and Secondary Schools.

Upon the recommendation of the Corporation of Washington University, the Carnegie Foundation, on May 5, 1910, voted to Professor Woodward a retiring allowance. He died at St. Louis on January 12, 1914.

REPORT OF THE TREASURER

REPORT OF THE TREASURER

To the Chairman and Trustees of the Carnegie Foundation for the Advancement of Teaching:

IN accordance with the provisions of Article IX of the By-laws, the chairman of the board of trustees designated Messrs. Patterson, Teele & Dennis, certified public accountants, to audit the accounts of the Foundation for the last fiscal year. The books of the treasurer were accordingly turned over to this firm, whose report follows.

October 17, 1914.

WE have audited the accounts of the Carnegie Foundation for the Advancement of Teaching, including the accounts for the General Endowment and the Division of Educational Enquiry, for the year ending September 30, 1914. Income from investments has been duly accounted for and expenditures have been duly authorized and vouched.

The securities representing the investments were produced to us (except bonds for \$200,000, for which the receipt of the custodian was produced to us¹) and the cash in bank and on hand has been duly verified.

The accompanying Income and Expenditure Account and Balance Sheet are in accordance with the books of the Foundation, and we hereby certify that they exhibit a true and correct statement of the finances at September 30, 1914.

(Signed) PATTERSON, TEELE & DENNIS,
Accountants and Auditors.

¹ These bonds are in process of redemption by the United States Steel Corporation. R. A. F., Treasurer.

INCOME AND EXPENDITURE
FOR THE YEAR ENDING SEPTEMBER 30, 1914
GENERAL ENDOWMENT

Income

From Securities in the Endowment Fund	\$650,488.98	
From other Investments	40,079.45	
<i>Total Income from Investments. Exhibit 1</i>		\$690,568.43
Accumulation of Bond Discount		2,630.89
Interest on Bank Balances		2,839.28
		<u><u>\$696,038.60</u></u>

Expenditure

RETIRING ALLOWANCES:

To Professors, Officers, and Widows in Institutions on the Associated List	\$514,489.58	
To Professors, Officers, and Widows not in Institutions on the Associated List	120,374.19	\$634,863.77

ADMINISTRATION:

Salaries	\$23,954.29	
Traveling Expenses of Trustees	2,181.20	
Rents	4,299.96	
Postage (proportion)	231.24	
Stationery and Office Supplies (proportion)	328.40	
Professional Fees	900.00	
Telephone and Telegraph (proportion)	116.92	
Depreciation of Furniture and Fittings, 10%	629.06	
Miscellaneous	269.71	\$32,910.78

PUBLICATION:

Printing Eighth Annual Report (proportion of cost)	\$1,268.64	
Labor, Postage, etc., Mailing (proportion of cost)	166.93	\$1,435.57
Printing Minutes		98.87
Printing Rules for Admission, etc.	224.00	\$1,758.44

<i>Total Expenditure for the year ending September 30, 1914</i>		\$669,532.99
Accumulation of Surplus Income for the year ending September 30, 1914		26,505.61
		<u><u>\$696,038.60</u></u>

INCOME AND EXPENDITURE
FOR THE YEAR ENDING SEPTEMBER 30, 1914
DIVISION OF EDUCATIONAL ENQUIRY

Income

From Securities in the Endowment Fund. <i>Exhibit 2</i>	\$50,000.00
Interest on Bank Balances	353.34
	<u>\$50,353.34</u>

Expenditure

COMMISSION TO INVESTIGATE THE EDUCATIONAL
SYSTEM AND CONDITIONS OF VERMONT:

Salary	\$1,250.00	
Professional Fees	2,067.70	
Traveling Expenses	401.23	
Printing Report	6,077.09	
Labor, Postage, etc., Mailing	649.51	\$10,445.53

STUDY OF LEGAL EDUCATION:

Salary	\$3,600.00	
Traveling Expenses	5,873.06	
Professional Fees	8,815.43	
Printing	95.40	
Sundries	54.62	\$18,438.51

STUDY OF ENGINEERING EDUCATION:

Salary	\$1,550.00	
Traveling Expenses	215.20	\$1,765.20

STUDY OF TRAINING OF TEACHERS:

Salary	\$250.00	
Traveling Expenses	200.00	\$450.00

PUBLICATION:

Seventh Annual Report (proportion of cost)			
Printing	\$2,537.28		
Labor, Postage, etc., Mailing	333.87	\$2,871.15	
Printing Minutes	43.84	\$2,914.99	
Salaries	\$7,501.99		
Traveling Expenses	1,484.82		
Professional Fees	520.00		
Rent	2,400.00		
Stationery and Office Supplies (proportion)	328.39	\$12,235.20	
<i>Carried forward</i>		\$46,249.43	\$50,353.34

REPORT OF THE TREASURER

<i>Amount brought forward</i>		\$46,249.43	<u>\$50,353.34</u>
Telephone and Telegraph (proportion)	\$116.98		
Postage (proportion)	231.25		
Depreciation of Furniture and Fittings, 10%	90.06		
Miscellaneous	341.75	\$779.99	
<i>Total Expenditure to September 30, 1914</i>		<u>\$47,029.42</u>	
Accumulation of Surplus Income for the year ending September 30, 1914		<u>\$3,323.92</u>	<u>\$50,353.34</u>

BALANCE SHEET, SEPTEMBER 30, 1914

GENERAL ENDOWMENT

Assets

INVESTMENTS. <i>Exhibit 1</i>		\$14,058,043.67
INTEREST ACCRUED ON INVESTMENTS TO SEPTEMBER 30, 1914. <i>Exhibit 1</i>		222,204.18
CASH IN BANK AND ON HAND		84,286.70
SUNDRY ACCOUNTS RECEIVABLE, ETC.		1,132.04
OFFICE FURNITURE AND FITTINGS	\$6,290.59	
Less Reserve for Depreciation	4,390.17	1,900.42
		<u>\$14,367,567.01</u>

Funds and Accumulations

ENDOWMENT FUND	\$13,000,000.00	
ENDOWMENT ACCUMULATIONS. <i>Exhibit 3</i>	120,000.00	
CARNEGIE FOUNDATION EDUCATIONAL DIVISION	1,630.52	
INCOME AND EXPENDITURE ACCOUNT:		
Accumulation to September 30, 1913	\$1,219,430.88	
Accumulation for the year ending Sep- tember 30, 1914. <i>Schedule B</i>	26,505.61	1,245,936.49
		<u>\$14,367,567.01</u>

BALANCE SHEET, SEPTEMBER 30, 1914

THE DIVISION OF EDUCATIONAL ENQUIRY

Assets

INVESTMENTS. <i>Exhibit 2</i>		\$1,250,000.00
INTEREST ACCRUED ON INVESTMENTS TO SEPTEMBER 30, 1914. <i>Exhibit 2</i>		19,166.66
CASH IN BANK		6,554.51
CARNEGIE FOUNDATION GENERAL ACCOUNT		1,630.52
SUNDRY ACCOUNTS RECEIVABLE, ETC.		2,338.44
OFFICE FURNITURE AND FITTINGS	\$900.55	
Less Reserve for Depreciation	117.27	783.28
		<u>\$1,280,473.41</u>

Funds and Accumulations

ENDOWMENT FUND	\$1,250,000.00	
SUNDRY ACCOUNTS PAYABLE	679.80	
INCOME AND EXPENDITURE ACCOUNT:		
Accumulation to September 30, 1914	\$26,469.69	
Accumulation for the year ending September 30, 1914. <i>Schedule B</i>	3,323.92	29,793.61
		<u>\$1,280,473.41</u>

STATEMENT OF SECURITIES AND INCOME THEREON SEPTEMBER 30, 1914

GENERAL ENDOWMENT

Schedule A, Exhibit 1

Par Value	Securities	Date Acquired	Date Interest due	Book Value	INTEREST	
					Accrued Year ending Sept. 30, 1914	Accrued Sept. 30, 1914 for later collection
\$2,000,000.00	U.S. Steel Corporation, Series "A" Registered 50 year 5% Gold Bonds. Due April 1, 1951	May 3, 1911, \$1,000,000.00 Dec. 2, 1911, \$1,000,000.00	Jan. 1 & July 1	\$2,000,000.00	\$100,000.00	\$25,000.00
3,050,000.00	U.S. Steel Corporation, Series "B" Registered ¹ 50 year 5% Gold Bonds. Due April 1, 1951	Dec. 1, 1905	Feb. 1 & Aug. 1	3,050,000.00	162,875.00	25,416.67
2,850,000.00	U.S. Steel Corporation, Series "D" Registered 50 year 5% Gold Bonds. Due April 1, 1951	Dec. 1, 1905	Apr. 1 & Oct. 1	2,850,000.00	142,500.00	71,250.00
1,000,000.00	U.S. Steel Corporation, Series "E" Registered 50 year 5% Gold Bonds. Due April 1, 1951	May 29, 1912	May 1 & Nov. 1	1,000,000.00	50,000.00	20,833.33
3,300,000.00	U.S. Steel Corporation, Series "F" Registered 50 year 5% Gold Bonds. Due April 1, 1951	Dec. 1, 1905	June 1 & Dec. 1	3,300,000.00	165,000.00	55,000.00
50,000.00	Baltimore & Ohio R. R. Co. Southwestern Division, First Mtge. 3½% Gold Coupon Bonds. Due July 1, 1925	June 9, 1906, \$20,000.00 Dec. 6, 1906, \$30,000.00	Jan. 1 & July 1	47,447.74	1,750.00	437.50
50,000.00	Pennsylvania Co. 4% 15-25 year Gold Coupon Loan 1906. Due April 1, 1931	June 9, 1906	Apr. 1 & Oct. 1	49,418.21	2,000.00	1,000.00
50,000.00	The Lake Shore & Michigan So. Ry. Co. 25 year 4% Gold Coupon Bonds. Due September 1, 1928	June 9, 1906	Mar. 1 & Sept. 1	49,448.06	2,000.00	166.67
50,000.00	Chicago, Burlington & Quincy R.R. Co. Illinois Division, First Mtge. 4% Bonds. Due July 1, 1949	April 1, 1906	Jan. 1 & July 1	50,455.58	2,000.00	500.00
50,000.00	Southern Pacific R. R. Co. First Refunding Mtge. 4% Gold Bonds. Due January 1, 1955	Aug. 1, 1906, \$20,000.00 Apr. 29, 1908, \$30,000.00	Jan. 1 & July 1	46,030.15	2,000.00	500.00
100,000.00	Oregon Short Line R. R. Co. 4% Refunding Gold Bonds. Due December 1, 1929	Oct. 3, 1906, \$60,000.00 Dec. 12, 1907, \$35,000.00 June 12, 1914, \$5,000.00	June 1 & Dec. 1	93,251.46	3,861.11	1,333.33
50,000.00	Oregon Railroad & Navigation Co. 4% Consolidated Mtge. Gold Bonds. Due June 1, 1946	Dec. 6, 1906, \$30,000.00 Apr. 30, 1908, \$5,000.00 Apr. 10, 1913, \$5,000.00 June 13, 1914, \$2,000.00 June 17, 1914, \$2,000.00 June 23, 1914, \$6,000.00	June 1 & Dec. 1	48,734.23	1,710.67	666.67

50,000.00	The City of New York Registered 3½% Corporate Stock for replenishing the Fund for Street & Park Openings. Due May 1, 1954	April 3, 1907	May 1 & Nov. 1	45,585.66	1,750.00	729.17
100,000.00	Northern Pacific—Great Northern, Chicago, Burlington & Quincy R. R. Co. Collateral Trust 4% Joint Bonds. Due July 1, 1921	July 2, 1907, \$70,000.00 Oct. 4, 1909, \$30,000.00	Jan. 1 & July 1	97,040.59	4,000.00	1,000.00
20,000.00	Central R. R. Co. of New Jersey General Mtge. 5% Bonds. Due July 1, 1907	Aug. 7, 1907	Jan. 1 & July 1	24,097.28	1,000.00	250.00
100,000.00	Union Pacific R. R. Co. 20 year 4% Convertible Gold Bonds. Due July 1, 1927	Oct. 11, 1907, \$35,000.00 Feb. 7, 1908, \$58,000.00 June 11, 1908, \$7,000.00	Jan. 1 & July 1	90,601.46	4,000.00	1,000.00
55,000.00	Chicago, Indiana & Southern R. R. Co. Consolidated Mtge. 4% 50 year Gold Bonds. Due January 1, 1956	July 10, 1908	Jan. 1 & July 1	50,579.65	2,200.00	550.00
50,000.00	Atchison, Topeka & Santa Fe Ry. Co. Transcontinental Short Line First Mtge. 4% 50 year Gold Bonds. Due July 1, 1958	Sept. 3, 1908, \$26,000.00 Apr. 10, 1913, \$4,000.00 Sept. 6, 1913, \$15,000.00 Sept. 29, 1913, \$5,000.00	Jan. 1 & July 1	46,366.18	2,199.44	500.00
50,000.00	Union Pacific R. R. Co. First Lien and Refunding Mtge. 4% Bonds. Due March 1, 2008	Nov. 9, 1908, \$36,000.00 Apr. 10, 1913, \$14,000.00	Mar. 1 & Sept. 1	47,836.12	2,000.00	166.67
50,000.00	Chesapeake & Ohio Ry. Co. General Funding and Improvement Mtge. 5% Bonds. Due January 1, 1929	March 12, 1909	Jan. 1 & July 1	50,628.14	2,500.00	625.00
50,000.00	Atchison, Topeka & Santa Fe Ry. Co. Gen. Mtge. 4% Bonds. Due October 1, 1995	May 17, 1909, \$25,000.00 June 12, 1914, \$25,000.00	Apr. 1 & Oct. 1	49,239.41	1,302.77	1000.00
100,000.00	Chicago, Milwaukee & St. Paul Ry. Co. 25 year 4% Gold Bonds. Due July 1, 1934	Feb. 3, 1910, \$75,000.00 June 16, 1914, \$25,000.00	Jan. 1 & July 1	94,236.12	3,291.67	1000.00
55,000.00	Baltimore & Ohio (Pittsburgh, Lake Erie & W. Virginia System) R. R. Co. Refunding 4% Gold Bonds. Due November 1, 1941	April 20, 1910	May 1 & Nov. 1	50,693.42	2,200.00	916.67
200,000.00	Illinois Central R. R. Co. Louisville Division & Terminal, First Mortgage 3½% Gold Bonds. Due July 1, 1953	March 11, 1913	Jan. 1 & July 1	170,677.11	7,000.00	1,750.00
99,000.00	Duluth, Missabe & Northern Ry. Co. ² General Mtge. 5% 25 year Gold Bonds. Due January 1, 1941	Mar. 11, 1913, \$59,000.00 June 12, 1914, \$25,000.00 June 13, 1914, \$5,000.00 June 17, 1914, \$10,000.00	Jan. 1 & July 1	104,358.32	3,584.02	1,237.50
300,000.00	H. C. Frick Coke Co., 5% Pittsburgh, Monongahela First Lien Purchase Money Gold Bonds. Due January 1, 1925, to January 1, 1944	March 13, 1913	Jan. 1 & July 1	310,670.17	15,000.00	3,750.00
250,000.00	Chicago, Milwaukee & St. Paul Railway Co., General and Refunding 4½% Gold Bonds. Due January 1, 2014	June 30, 1914	Apr. 1 & Oct. 1	240,648.61	2,843.75	5,625.00
\$14,129,000.00	Total			\$14,058,043.67	\$690,566.43	\$232,204.18

¹ \$200,000.00 par value redeemed June 10, 1914.

² \$1,000.00 par value redeemed July 3, 1914.

DIVISION OF EDUCATIONAL ENQUIRY

Schedule A, Exhibit 2

<i>Par Value</i>	<i>Securities</i>	<i>Date Acquired</i>	<i>Date Interest due</i>	<i>Book Value</i>	INTEREST	
					<i>Accrued Year ending Sept. 30, 1914</i>	<i>Accrued Sept. 30, 1914 for later collection</i>
\$1,000,000.00	Chicago & Northwestern Railway Co. 4% General Mortgage Gold Coupon Bonds. Due November 1, 1987	March 10, 1913	May 1 & Nov. 1	\$1,000,000.00	\$40,000.00	\$16,666.66
250,000.00	Westchester County, New York, Registered Bronx Valley Sanitary Sewer District 4% Bonds. Due January 1, 1933 to January 1, 1974, inclusive	March 10, 1913	Jan. 1 & July 1	250,000.00	10,000.00	2,500.00
\$1,250,000.00	<i>Total</i>			\$1,250,000.00	\$50,000.00	\$19,166.66

ENDOWMENT ACCUMULATION
APART FROM ORDINARY INCOME AND EXPENDITURE ACCOUNT

Schedule A, Exhibit 3

SEPTEMBER 30, 1913. BALANCE AT CREDIT OF FUND	\$75,000.00
ADD:	
Premium received June 10, 1914, on redemption of \$300,000.00 par value of United States Steel Corporation 5% Bonds Series "B"	45,000.00
September 30, 1914. Balance per Balance Sheet	<u>\$120,000.00</u>

The treasurer has submitted from time to time to the executive committee statements of receipts and expenditures, which were printed and sent to all trustees. These statements, together with the report of the auditing firm just quoted, give a complete account of the financial operations of the Foundation for the period covered by this report.

ROBERT A. FRANKS, *Treasurer*

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THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

TENTH ANNUAL REPORT
OF THE
PRESIDENT AND OF THE TREASURER



576 FIFTH AVENUE
NEW YORK CITY
OCTOBER, 1915

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MERRYMOUNT PRESS

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1

REPORT OF THE PRESIDENT

PART I

THE BUSINESS OF THE YEAR

REPORT OF THE PRESIDENT

To the Chairman and Trustees of the Carnegie Foundation for the Advancement of Teaching:

IN accordance with the by-laws, I present herewith the Tenth Annual Report of the President of the Foundation, for the fiscal year ending September 30, 1915.

In addition to the usual current business of the Foundation, this tenth year of the Foundation's history has been considered an appropriate occasion for a survey of the sum of the Foundation's activities, including a study of the history and purpose of its pension system, and a report upon its future policy in the light of ten years of experience. This is included in a special publication which will become the Ninth Bulletin.

For the Division of Educational Enquiry the report includes a statement of the legislative results of its Study of Education in Vermont, and reports of progress in its studies of legal education, engineering education, and the training of teachers in Missouri. For the purpose of these studies the small permanent staff of the Foundation has been supplemented by the addition of scholars who have been generously given leave of absence by their universities. In this way Professor Mann of the University of Chicago and Professor Josselyn of the University of Kansas continue their work upon engineering education and the training of teachers respectively. In addition Professor Edward L. Thorndike of Columbia is coöperating in the former and Professor William C. Bagley of the University of Illinois in the latter study. The study of legal education has enlisted the active and at times continuous coöperation of nearly two score deans and professors in law schools and members of the bar. The Foundation's appreciation of their coöperation will be expressed in its appropriate place. The cordial interest and aid extended to the other enquiries that are in progress will make them approximate closely the ideal set for such studies,—that they should represent the opinion of the most competent judges in their respective fields based upon a practically complete survey of the facts.

ENDOWMENT, INCOME, AND EXPENDITURE

THE trustees held in trust at the close of the fiscal year the following securities, given at their face value:

(a) General Endowment

United States Steel Corporation 50 year 5 per cent Gold	
Bonds	\$12,000,000.00
Other Securities	2,129,000.00
Total	\$14,129,000.00

(b) Division of Educational Enquiry

Total	1,250,000.00
	\$15,379,000.00

THE BUSINESS OF THE YEAR

During the fiscal year the trustees received from the general endowment an income of \$697,892.54, and from the endowment of the Division of Educational Enquiry \$50,300.50.

The expenditures have been as follows:

(a) General Endowment

Retiring Allowances and Pensions in Institutions on the Associated List

Officers and Teachers	\$473,969.38	
Widows	80,152.31	\$554,121.69

Retiring Allowances and Pensions granted to Individuals

Officers and Teachers	\$99,850.81	
Widows	20,752.47	\$120,603.28

Expenses of Administration 36,550.93

Publication 1,576.88

Total \$712,852.78

(b) Division of Educational Enquiry

General \$9,787.13

Study of Legal Education 15,024.26

Study of the Training of Teachers 15,991.06

Study of Engineering Education 10,991.25

Publication 2,839.92

Total \$54,633.62

The cash balance of the General Endowment on September 30, 1915, was \$104,673.63; of the Division of Educational Enquiry, \$4,016.64.

THE ANNUAL MEETING OF THE TRUSTEES

THE trustees held their ninth annual meeting at the offices of the Foundation on November 18, 1914. Principal Peterson of McGill University, the chairman of the board, presided. Of the twenty-four trustees, twenty-three were present.

In the election of officers President Slocum of Colorado College was chosen chairman, President Hadley of Yale, vice-chairman, and President Thwing of Western Reserve University, secretary. Presidents Hadley of Yale and Schurman of Cornell were elected to succeed themselves on the executive committee for a term of three years.

The resignation of Dr. James M. Taylor, the retiring president of Vassar College, was presented and accepted, and the secretary was instructed to convey to President Taylor the regret of the trustees at the severance of a relationship which had been to them one of much satisfaction and grateful fellowship. The trustees postponed for the time the filling of the place thus left vacant.

The executive committee reported the carrying out of its authorization to adopt a seal for the Foundation. It presented its preliminary enquiries into the need for an

earlier retiring age for women than for men, and its conclusion that careful actuarial statistics over a long period would be required as a sound basis for action, and reported a similar necessity for a record of twenty-five or thirty years in order to determine the relation between the standard mortality tables and the greater longevity hitherto found in the experience of the Foundation. Detailed reports of the work of the Division of Educational Enquiry were made. After discussion, the trustees approved the policy and action of the committee in each of these matters, and authorized the committee, whenever desirable, to indicate that the publications of the Foundation were prepared under the direction of the president, with the authority of the trustees, and were issued with their approval.

THE EXECUTIVE COMMITTEE

THE executive committee met five times during the fiscal year. Full records of these meetings with detailed reports of the current finances were forwarded to the trustees after each meeting. The retiring allowances and pensions voted by the committee during the year are given in full on later pages of this report.

The committee made sundry decisions concerning the counting of service in European institutions toward retiring allowances. Concerning Rule 4, which provides for the retiring of professors before the age of sixty-five and the assumption of the allowance by the Foundation at sixty-five, the committee decided that, unless it directs otherwise, such allowances should be computed according to the rules for retirement on the basis of disability.

It decided that when a school or college which had been part of an institution accepted by the Foundation became an independent institution it would have to make a new application for admission to the accepted list.

The committee authorized the expenditure necessary for the employment of outside experts in studying the pension system of the Foundation, and approved the written answers of the president to several hundred questions from the Federal Commission on Industrial Relations. Concerning cases where a professor appealed to the Foundation on the grounds of unfair dismissal the committee, without seeking to interfere in the administration of any institution, approved the practice of requesting, for the files of the Foundation, a statement of the institution's view of the circumstances.

The May meeting, according to custom, considered a large number of applications for allowances for teachers and the widows of teachers who were not connected with institutions upon the accepted list. Since the income of two and one-half million dollars is now used in such allowances, the committee decided that it was unwise at present to add to these obligations.

Finally, the committee referred to the trustees the question of replacing the term "accepted institution" by "associated institution."

ALLOWANCES GRANTED DURING THE YEAR

1. IN INSTITUTIONS ON THE ASSOCIATED LIST

RETIRING ALLOWANCES

<i>Institution</i>	<i>Name</i>	<i>Academic Title</i>	<i>Date Effective</i>
AMHERST COLLEGE.....	GEORGE HARRIS, D.D., LL.D.....	President	Aug. 1, 1914
COLUMBIA UNIVERSITY.....	SAMUEL TRAIN DUTTON, A.M., LL.D.	Professor of School Administra- tion	July 1, 1915
	HENRY SMITH MUNROE, PH.D., SC.D.	Professor of Mining.....	July 1, 1915
CORNELL UNIVERSITY.....	CHARLES LEE CRANDALL, C.E.....	Professor of Railroad Engineering	July 20, 1915
	GEORGE WILLIAM HARRIS, PH.B.....	Librarian.....	June 16, 1915
HARVARD UNIVERSITY.....	WILLIAM MORRIS DAVIS, M.E., SC.D., PH.D.....	Sturgis-Hooper Professor of Ge- ology	Feb. 1, 1915
JOHNS HOPKINS UNIVERSITY.....	BASIL L. GILDERSLEEVE, PH.D., LL.D., D.C.L., L.H.D., LITT.D.....	Francis White Professor of Greek	July 1, 1915
	EDWARD HERRICK GRIFFIN, D.D., LL.D.	Professor of the History of Phi- losophy, and Dean.....	July 1, 1915
PRINCETON UNIVERSITY.....	CHARLES MACMILLAN, A.M., C.E.....	Professor of Civil Engineering ...	July 1, 1914
PURDUE UNIVERSITY.....	JOSEPH CHARLES ARTHUR, M.S., SC.D.	Professor of Vegetable Physiology and Pathology.....	Sept. 1, 1915
RIPON COLLEGE.....	WILLIAM E. JILLSON, A.M.	Professor of German, and Libra- rian	July 1, 1915
UNIVERSITY OF CALIFORNIA.....	EDWARD J. WICKSON, M.A.	Professor of Horticulture.....	July 1, 1915
UNIVERSITY OF MISSOURI.....	PAUL J. WILKINS, B.S.....	Instructor in Modern Languages	June 1, 1915
UNIVERSITY OF PENNSYLVANIA.....	HENRY GIBBONS.....	Professor of Latin Literature.....	July 1, 1915
UNIVERSITY OF PITTSBURGH.....	FRANCIS CLIFFORD PHILLIPS, PH.D.	Professor of Chemistry.....	July 1, 1915
UNIVERSITY OF WISCONSIN.....	EDWARD THOMAS OWEN	Professor of French and Linguis- tics	July 1, 1915
	WILLIAM HOLME WILLIAMS.....	Professor of Semitic Languages and Hellenistic Greek	July 1, 1915
WASHINGTON AND JEFFERSON COL- LEGE	JAMES DAVID MOFFATT, LL.D.....	President.....	Jan. 1, 1915
WASHINGTON UNIVERSITY.....	WILLIAM S. CURTIS, LL.D.....	Dean of the Law School.....	July 1, 1915
	FRANCIS EUGENE NIPHER, A.M., LL.D.	Professor of Physics	Aug. 1, 1914
YALE UNIVERSITY.....	CHARLES SHELDON HASTINGS, PH.D.	Professor of Physics.....	July 1, 1915

WIDOWS' PENSIONS

<i>Institution</i>	<i>Name</i>	<i>Husband's Title</i>	<i>Date Effective</i>
BOWDOIN COLLEGE.....	LILLIE THAYER LITTLE.....	Librarian.....	Aug. 7, 1915
CENTRAL UNIVERSITY OF KENTUCKY	MYRA B. BLANTON	Vice-President	Oct. 18, 1914
CORNELL UNIVERSITY.....	JOSEPHINE M. Q. STERRETT.....	Professor of Greek.....	June 16, 1914
DARTMOUTH COLLEGE.....	LUCY R. SHERMAN.....	Professor of Mathematics	Mar. 27, 1915
HARVARD UNIVERSITY.....	LUCY FOSDICK MINOT.....	James Stillman Professor of Com- parative Anatomy, and Director of the Laboratory of Anatomy.	Dec. 1, 1914
MASSACHUSETTS INSTITUTE OF TECH- NOLOGY	ANNA SELLEW ADAMS.....	Professor of Drawing and Descrip- tive Geometry.....	Sept. 17, 1914
	FRANCES CATHERINE MERRICK.....	Instructor in Woodwork and Foundrywork	June 16, 1915

WIDOWS' PENSIONS (CONTINUED)

<i>Institution</i>	<i>Name</i>	<i>Husband's Title</i>	<i>Date Effective</i>
McGILL UNIVERSITY	KATHERINE M. MILLS	Professor of Physiology	Mar. 14, 1915
STEVENS INSTITUTE OF TECHNOLOGY	EVELYN HOLDEN McCORD	Professor of Mechanical Drawing and Designing	May 14, 1915
	MRS. THOMAS C. STILLMAN	Professor of Engineering and Chemistry	Sept. 11, 1915
UNIVERSITY OF CINCINNATI	MRS. WAYLAND R. BENEDICT	Professor of Philosophy and History	Aug. 22, 1915
UNIVERSITY OF CALIFORNIA	SARAH FIELD CHRISTY	Professor of Mining and Metallurgy, and Dean of the College of Mines	Dec. 1, 1914
UNIVERSITY OF MINNESOTA	MAY HEWITT HAYNES	Professor of Engineering Mathematics	Apr. 13, 1915
UNIVERSITY OF TORONTO	EMILY GALBRAITH	Dean of the Faculty of Applied Science and Engineering, and Professor of Engineering	July 23, 1914
UNIVERSITY OF VERMONT	ELLEN MOODY GOODRICH	Professor of Latin	Mar. 25, 1915
YALE UNIVERSITY	JENNIE FOLWELL LOUNSBURY	Professor of the English Language and Literature	May 10, 1915

2. IN INSTITUTIONS NOT ON THE ASSOCIATED LIST

RETIRING ALLOWANCES

<i>Institution</i>	<i>Name</i>	<i>Academic Title</i>	<i>Date Effective</i>
OSGOODE HALL	JOHN KING, M.A.	Lecturer in Law	Sept. 2, 1915
UNIVERSITY OF WEST VIRGINIA	DANIEL B. PURINTON, PH.D.	President	Feb. 15, 1915

WIDOWS' PENSIONS

<i>Institution</i>	<i>Name</i>	<i>Husband's Title</i>	<i>Date Effective</i>
HOWARD UNIVERSITY	HARRIET A. FAIRFIELD	Professor of the Greek Language and Literature	Dec. 7, 1914
PACIFIC UNIVERSITY	MARY M. MARSH	Professor of Latin and Greek	Mar. 1, 1915
UNIVERSITY OF KANSAS	JOSEPHINE M. MARVIN	Dean of the School of Engineering	Mar. 7, 1915
UNIVERSITY OF WEST VIRGINIA	MARY HARRISON BROWN BROOKE	Professor of Law	June 17, 1914

FINANCIAL DATA CONCERNING ALLOWANCES GRANTED DURING THE FISCAL YEAR

OCTOBER 1, 1914, TO SEPTEMBER 30, 1915

PARTICIPANTS	Number of Allowances Granted	Average Age at Date of Retirement	Average Length of Service	Number of Deaths during the Year	Average Amount of Allowance	TOTAL GRANT FOR THE YEAR
PROFESSORS AND OFFICERS IN INSTITUTIONS ON THE ACCEPTED LIST.....	21	66.9	33.9	21	\$2,196.43	\$46,125
PROFESSORS AND OFFICERS IN INSTITUTIONS NOT ON THE ACCEPTED LIST.....	2	68	27.5	5	1,725.00	3,450
WIDOWS OF PROFESSORS AND OFFICERS IN INSTITUTIONS ON THE ACCEPTED LIST...	16			1	898.12	14,433 ¹
WIDOWS OF PROFESSORS AND OFFICERS IN INSTITUTIONS NOT ON THE ACCEPTED LIST	4			1	691.25	2,765
TOTAL.....	43			28	GENERAL AVERAGE OF RETIRING ALLOWANCES \$1,560.65	68,773

¹ Including an increase of \$95 in an earlier pension, not included in the average.

ALLOWANCES NOW IN FORCE

FINANCIAL SUMMARY ON SEPTEMBER 30, 1915

GRANTEES	Number of Allowances in Force				Average Age at Date of Retirement			Average Length of Service			Average Amount of Allowance			TOTAL GRANT IN FORCE SEPT. 30, 1915
	On basis of age	On basis of service	On basis of disability	Total	Retired on basis of age	On basis of service	On basis of disability	Retired on basis of age	On basis of service	On basis of disability	On basis of age	On basis of service	On basis of disability	
PROFESSORS AND OFFICERS IN ACCEPTED INSTITUTIONS...	187	58	12	257	68.7	63.4	57.5	32.6	34	28.9	\$1,900.32	\$1,901.50	\$1,280.06	\$486,120
PROFESSORS AND OFFICERS NOT IN ACCEPTED INSTITUTIONS	43	24	3	70	69	64.9	62.8	29.9	36.5	33.4	1,383.51	1,466.73	1,259.94	98,645
WIDOWS OF PROFESSORS AND OFFICERS IN ACCEPTED INSTITUTIONS				91							940.89			85,178
WIDOWS OF PROFESSORS AND OFFICERS NOT IN ACCEPTED INSTITUTIONS				27							792.69			20,725
TOTAL				445							GENERAL AVERAGE OF RETIRING ALLOWANCES \$1,552.06			690,668

TOTAL NUMBER OF ALLOWANCES GRANTED

YEAR	INSTITUTIONS	Age	Service	Permanent Disability	Temporary Grants	Widows	Total	Deduct		Net Increase	Allowances & Pensions in Force at End of Year
								For Deaths	For Discontinuances		
1906 ¹	Accepted Institutions	21	18		7	5	51			51	
	Unaccepted Institutions	18	15		4	3	40	1		39	90
1906-7	Accepted Institutions	24	14		2	7	47	9		38	
	Unaccepted Institutions	8	16		3	1	28	8		20	148
1907-8	Accepted Institutions	18	18		4	9	49	8	1	40	
	Unaccepted Institutions	11	9		4	6	30	5	1	24	212
1908-9	Accepted Institutions	29	25		8	13	75	5		70	
	Unaccepted Institutions	18	15		4	3	40	2	1	37	319
1909-10	Accepted Institutions	26	6	2	4	7	45	11	11	23	
	Unaccepted Institutions	10		1	2	5	18	12	3	3	345
1910-11	Accepted Institutions	21		6	2	13	42	15		27	
	Unaccepted Institutions		1		1	4	6	2	3	1	373
1911-12	Accepted Institutions	29		3		11	43	11	2	30	
	Unaccepted Institutions	2				3	5	9	1	5 ¹	398
1912-13	Accepted Institutions	22				8	30	17		13	
	Unaccepted Institutions	2				1	3	12		9 ¹	402
1913-14	Accepted Institutions	20		5		12	37	12		25	
	Unaccepted Institutions	3		1		3	7	4		3	430
1914-15	Accepted Institutions	20		1		16	37	22		15	
	Unaccepted Institutions	2				4	6	6		0	445
	Totals	304	137	19	45	134	639	171	23		445

¹ July 1 to September 30. ² Decrease.

GEOGRAPHICAL DISTRIBUTION OF ALLOWANCES GRANTED

STATE, TERRITORY, OR PROVINCE	Number of Allowances granted			Deaths	Temporary Allowances Discon- tinued	Number of Allow- ances in Force
	In Institutions on the Associated List	In Institutions not on the Associated List	Total			
NORTH ATLANTIC DIVISION						
MAINE	9	3	12	2	1	9
NEW HAMPSHIRE	10		10	3	1	6
VERMONT	6		6	1		5
MASSACHUSETTS	82	4	86	22	3	81
RHODE ISLAND		2	2	1		1
CONNECTICUT	32	3	35	7		28
NEW YORK	82	9	91	22	4	65
NEW JERSEY	22		22	7		15
PENNSYLVANIA	33	9	42	13	1	28
Total	306					
SOUTH ATLANTIC DIVISION						
MARYLAND	9	1	10	1		9
DISTRICT OF COLUMBIA....	2	6	8	3		5
VIRGINIA	9	11	20	10		10
WEST VIRGINIA		6	6	1		5
NORTH CAROLINA		7	7	3		4
SOUTH CAROLINA		7	7	3		4
GEORGIA		4	4	2		2
FLORIDA		3	3			3
Total	65					
SOUTH CENTRAL DIVISION						
KENTUCKY	5	4	9	3		6
TENNESSEE		8	8	6		2
ALABAMA		5	5	3		2
MISSISSIPPI		2	2			2
LOUISIANA	11		11	2	1	8
Total	35					
NORTH CENTRAL DIVISION						
OHIO	17	17	34	9	2	23
INDIANA	12	5	17	2		15
ILLINOIS	3	6	9	3	2	4
MICHIGAN	10	4	14	4		10
WISCONSIN	22		22	5		17
MINNESOTA	22	1	23	5		18
IOWA	7	14	21	4	4	13
MISSOURI	17	4	21	5		16
NORTH DAKOTA		3	3	2		1
NEBRASKA		1	1			1
KANSAS.....		5	5	1	1	3
Total	170					
WESTERN DIVISION						
MONTANA		2	2	1		1
COLORADO.....	2	5	7		2	5
CALIFORNIA	15	8	23	7	1	15
OREGON.....		5	5	2		3
Total	37					
THE DOMINION OF CANADA						
ONTARIO.....	4	2	6			6
QUEBEC	11		11	4		7
NOVA SCOTIA	3		3			3
NEW BRUNSWICK		3	3	1		2
PRINCE EDWARD ISLAND...		1	1			1
Total	24					
NEWFOUNDLAND						
		2	2	1		1
Total	2					
Grand Total	457	182	639	171	23	445

TOTAL EXPENDITURE IN ALLOWANCES

YEAR	INSTITUTIONS	Number of Institutions	Number of Teachers in Faculties	Number of Retired Teachers on Roll	Average Age at Retirement on Basis of Age	Amount of Retiring Allowances Paid	Number of Widows Pensioned	Amount of Widows' Pensions Paid	Total Load of Allowances and Pensions	Total Amount Paid
1906 ¹	Accepted	52	2,261	46	71	\$15,478.53	5	\$1,124.97	\$77,985	\$16,608.50
	Unaccepted	32		37	70	6,474.53	3	124.98	48,910	6,599.51
1906-7	Accepted	55	2,309	88	70	77,574.09	12	8,039.06	129,855	85,613.15
	Unaccepted	48		55	71.6	47,654.11	4	2,420.00	77,525	50,074.11
1907-8	Accepted	62	2,444 ¹	124	70	146,140.47	19	14,989.48	203,290	161,129.95
	Unaccepted	59		66	70.5	80,134.26	10	5,378.20	100,215	85,512.46
1908-9	Accepted	67	2,966 ²	185	69.7	206,472.57	33	24,545.00	313,985	231,017.57
	Unaccepted	62		100	69.8	104,586.66	13	8,316.67	152,335	112,853.33
1909-10	Accepted	71	3,512 ³	198	69.6	291,403.98	40	33,795.04	382,120	325,199.02
	Unaccepted	77		92	70.6	132,497.51	17	12,137.77	138,950	144,635.28
1910-11	Accepted	72	5,025	215	69.5	341,899.16	52	46,720.17	425,105	388,619.33
	Unaccepted	77		85	70.1	122,215.10	21	16,044.57	128,560	138,259.67
1911-12	Accepted	72	5,066	236	69.3	388,338.27	61	53,646.37	478,440	441,984.64
	Unaccepted	68		79	69.7	108,329.55	22	20,045.84	125,415	128,438.39
1912-13	Accepted	73		244	69	416,626.37	67	62,360.77	501,415	478,987.14
	Unaccepted	63		72	69.2	102,814.10	21	18,588.77	115,055	121,402.87
1913-14	Accepted	73		268	68.7	444,968.52	79	69,523.06	544,150	514,489.58
	Unaccepted	66		76	69.1	99,984.68	24	20,389.51	121,185	120,374.19
1914-15	Accepted	73		257	66.9	473,969.38	91	80,152.31	571,298	554,121.69
	Unaccepted	65		70	68	99,850.81	27	20,752.47	119,370	120,603.28

¹ July 1 to September 30.

² Estimated.

TOTAL LOAD OF ALLOWANCES ASSUMED

YEAR	INSTITUTIONS	Age	Service	Perma- nent Dis- ability	Tempo- rary Grants	Widows	Total	Deduct		Net Increase	Annual Load at End of Year
								For Deaths	For Dis- continu- ances		
1908 ¹	Accepted	28,545	\$34,915		\$9,975	\$4,500	\$77,935			\$77,935	
	Unaccepted	22,330	20,145		5,600	2,170	50,245	\$1,835		48,910	\$126,845
1908-7	Accepted	36,750	24,435		2,540	6,165	69,890	17,970		\$51,920	
	Unaccepted	11,040	23,355		3,370	500	38,265	9,850		28,615	207,380
1907-8	Accepted	28,200	27,450		9,600	8,675	73,925	4,480	\$600	\$68,845	
	Unaccepted	14,785	14,975		6,000	4,080	39,840	11,800	960	27,080	303,305
1908-9	Accepted	47,855	46,490		12,485	11,700	118,530	7,085		\$110,845	
	Unaccepted	20,540	30,500		5,100	2,220	58,360	6,190	1,500	52,170	496,320
1908-10	Accepted	56,315	12,820	\$2,515	7,000	7,025	85,675	17,830	19,370	\$48,475	
	Unaccepted	16,970		720	2,400	5,060	25,160	14,975	3,900	6,275	521,070
1910-11	Accepted	40,515		8,380	1,800	12,250	62,945	26,815	2,360	\$33,770	
	Unaccepted		3,010		1,000	2,955	6,965	3,920	4,220	1,175 ²	553,685
1911-12	Accepted	58,185		4,375		10,705	73,285	16,930	3,000	\$53,335	
	Unaccepted	5,600				8,000	8,600	10,745	1,000	3,145 ²	603,855
1912-13	Accepted	43,575				6,810	50,385	27,130	280	\$22,975	
	Unaccepted	4,200				600	4,800	15,160		10,360 ²	616,470
1913-14	Accepted	49,790				12,180	61,970	17,710		\$44,260	
	Unaccepted	6,480				2,500	8,980	4,325		4,605	665,335
1914-15	Accepted	45,350		775		14,433	60,558	38,410		\$27,148	
	Unaccepted	3,450				2,765	6,215	8,080		1,815 ²	690,668

¹ July 1 to September 30. ² Decrease.

PUBLICATIONS OF THE FOUNDATION

THE object of the Foundation, as outlined in its Act of Incorporation, being both to provide retiring allowances and pensions, and "in general, to do and perform all things necessary to encourage, uphold and dignify the profession of the teacher and the cause of higher education," the provision of allowances and pensions has been conducted from the beginning as a means to the improvement of educational conditions, and the trustees, from time to time, have authorized the study by the Foundation of various special educational problems, as these bear upon the functions of the Foundation in the provision of retiring allowances, or its wider efforts in behalf of the general advancement of teaching. Each year, therefore, the Foundation has issued one or more educational publications. The separate endowment, in 1913, of the Division of Educational Enquiry made special and permanent provision for such publication.

All of the publications of the Foundation are sent regularly to all universities and colleges in the United States, Canada, and Newfoundland; and to a selected list of libraries and representative educators throughout the world. The distribution has been wide and without charge, except in the case of Bulletins Number Four and Six, for which fifteen and seventeen cents, respectively, have been asked for postage. The demand, however, is so large that it cannot be met in every instance. In case of special requests, a statement of the use to which the publications are to be put will be appreciated. In general, the publications of the Foundation may be consulted in most university, college, and public libraries.

As indicated in the following list, the First and Second Annual Reports, and Bulletins Number One and Two, are now out of print, and cannot be supplied.

A complete list of the publications hitherto issued by the Foundation comprises:

THE ANNUAL REPORTS

These contain in each instance: (I) An account of the business of the year, including the meetings of the trustees and of the executive committee, the admission of institutions to the accepted list, the voting of retiring allowances, and the general administration of the trust; (II) sundry results of enquiry into educational problems that affect the advancement of teaching. Some reference to these records is given in the following summaries; (III) brief biographies of recipients of retiring allowances who have died during the year; and (IV) the report of the treasurer.

The First Annual Report of the President and of the Treasurer, *84 pages*. 1906.

Including an historical sketch of the Foundation; a study of army and professorial pensions; and a statement of the general policy, the educational standards, and the administrative rules of the Foundation. (*Out of print.*)

The Second Annual Report of the President and of the Treasurer, 124 pages. 1907.

Including discussions of the place of the college and the university in the United States, the function of college entrance requirements, the forms of denominational control, the relation of the Foundation to denominational and state institutions, and the ratio between institutional cost and efficiency. (*Out of print.*)

The Third Annual Report of the President and of the Treasurer, 211 pages. 1908.

Including academic and financial data concerning institutions on the accepted list; and discussions of the problems of financial reports, pensions, and life insurance; of the governmental and political aspects of tax-supported institutions; of entrance requirements, instruction, higher and professional education, and of the influence of denominational boards of education.

The Fourth Annual Report of the President and of the Treasurer, 201 pages. 1909.

Including discussions of the rules for retirement, of agricultural education, of college administration and advertising, and complete records of the practice of the institutions on the accepted list of the Foundation in admitting regular, conditioned, and special students.

The Fifth Annual Report of the President and of the Treasurer, 113 pages. 1910.

Including discussions of the relation of colleges to professional, technical, and industrial education, to secondary schools, to the training of teachers, and to state supervision; together with the comments of Oxford tutors on American education as represented by Rhodes scholars.

The Sixth Annual Report of the President and of the Treasurer, 154 pages. 1911.

Including discussions of the application of the rules for retirement, and the obligations and influences of pension systems; together with a critical and constructive survey of education from a national point of view, as this is reflected in legislation, state systems, regional conditions, the relations of school, college, and university, in professional and graduate study and religious education, and in the problems of political and alumni influence.

The Seventh Annual Report of the President and of the Treasurer, 194 pages. 1912.

Including discussions of actual and possible systems of college pensions; state, district, and local pensions for public school teachers; industrial and civil service pensions; contributory and non-contributory, subsistence and stipendiary pensions in general; and a review of the administrative, financial, and educational experience of the Foundation; together with comments upon admission to college and to advanced standing, medical progress, college financial reporting, advertising in education, education and politics, and sham universities.

The Eighth Annual Report of the President and of the Treasurer, 158 pages. 1913.

Including discussions of recent pension developments, of the Carnegie Corporation of New York, of the establishment of the Division of Educational Enquiry and its

studies of medical education, education in Vermont, and legal education; together with comments on college entrance requirements, the state regulation of higher education, politics and education in Iowa, the improved financial status of college teachers, and college catalogues.

The Ninth Annual Report of the President and of the Treasurer, *154 pages*. 1914.

Including discussions of pension principles and of recent developments in the field of teachers, industrial, and federal pensions; records of the progress of the Foundation's studies of legal education, engineering education, and the training of teachers; comments upon the results of its Study of Education in Vermont and upon recent developments in medical education; and discussions concerning educational standards, state educational reports, and educational surveys.

THE BULLETINS

Number One. Papers Relating to the Admission of State Institutions to the System of Retiring Allowances of the Carnegie Foundation, *45 pages*. 1907.

Including arguments in favor of the admission of state and provincial universities to the benefits of the Foundation, and a statement by the president of the administrative and financial problems involved. (*Out of print*.)

Number Two. The Financial Status of the Professor in America and in Germany, *101 pages*. 1908.

A study of the expenditure for instruction in one hundred and fifty-six American institutions, with comparisons of the maximum and average salaries, the average age, the amount of teaching, the appointment, tenure, and retirement privileges of professors in the United States and Canada and in Germany. (*Out of print*.)

Number Three. Standard Forms for Financial Reports of Colleges, Universities and Technical Schools, *37 pages*. 1910.

Containing twenty-five typical blank forms for the public reporting of the financial receipts and expenditure of universities and colleges, with an introduction recommending the modification of current practice in directions commended by educators, financiers, and accountants. (*Out of print; a new edition is in preparation*.)

Number Four. Medical Education in the United States and Canada, *346 pages*. 1910.

A comprehensive report to the Foundation, by ABRAHAM FLEXNER, on medical education in the United States and Canada, with regard to the course of study, financial aspects, medical sects, state boards, post-graduate schools, and other special forms of medical education; with descriptive and tabular accounts of all of the medical schools throughout the United States and Canada; and a general plan for reconstruction, with an introduction by the president of the Foundation.

Number Five. Academic and Industrial Efficiency, 134 pages. 1910.

A report to the Foundation, by MORRIS LLEWELLYN COOKE, on the teaching and research in physics in eight American universities, colleges, and technical schools, with an endeavor to estimate efficiency in organization, teaching, research, the use of buildings, and in financial, departmental, and student administration.

Number Six. Medical Education in Europe, 357 pages. 1912.

A report by ABRAHAM FLEXNER concerning the contemporary condition in Germany, Great Britain, and France, of the basis of medical education, the preliminary and the medical sciences, clinical instruction, curricula and examinations, post-graduate education, the medical education of women, the number and distribution of physicians, the financial aspects of medical education, and the problem of sects and quacks; together with an introduction by the president of the Foundation, contrasting these European conditions with those in the United States and Canada.

Number Seven. Education in Vermont, 241 pages. 1914.

A study prepared at the request of the Vermont Educational Commission, giving the reason for and the method of the enquiry, description and discussion of the entire educational system of the state, with certain conclusions and recommendations, and a brief statistical appendix.

Number Eight. The Common Law and the Case Method in American University Law Schools, 84 pages. 1914.

A report to the Foundation by JOSEF REDLICH, of the University of Vienna, dealing with law as a science and a profession, early methods of legal instruction, the development and success of the case method, its weaknesses, and suggestions for improvement in legal instruction, scholarship, and research.

OTHER PUBLICATIONS

Rules for the Admission of Institutions and for the Granting of Retiring Allowances, 16 pages. 1906. Revised, 12 pages. 1910; 10 pages. 1913.

A Plan for an Exchange of Teachers between Prussia and the United States, 7 pages. 1908.

An American Teacher's Year in a Prussian Gymnasium, 37 pages. 1911.

PART II
THE DIVISION OF EDUCATIONAL ENQUIRY

THE DIVISION OF EDUCATIONAL ENQUIRY

The studies undertaken by this division necessarily require a considerable period of time for the collection of material and for its thorough discussion. The following statements indicate the progress made in such studies during the year

THE STUDY OF LEGAL EDUCATION

THE Annual Reports of the President to the Trustees provide an opportunity of keeping the public informed as to the progress of our several studies of higher education. Frank, informal statements are peculiarly due when enquiries have been planned on a somewhat comprehensive scale, so that published results are slow in forthcoming. The besetting danger of all organizations for educational enquiry is not that they will use their powers of enquiry and criticism improperly, but that they will not utilize these powers to their full extent. When large trust funds have been created for purposes of public service, the public should be interested in the question whether these funds are being used primarily for the support of a large staff pottering with unimportant details, or whether work of value is apparently being accomplished.

The principal event of the past year in our study of legal education was the publication, as Bulletin No. 8, of the special report prepared for us by Professor Josef Redlich of Vienna, under the title of "The Common Law and the Case Method in American University Law Schools." This attempt, on the part of a foreigner, to do justice to certain important phases of American legal education has been received with a degree of respect which is the more remarkable in view of the animosities engendered among scholars by the international conflict. At some subsequent date an attempt will be made to summarize the various comments, published and otherwise, which from time to time have been received, and we hope will continue to be received, by the Foundation.

Simultaneously with the translation in this office, subject to his revision, of Professor Redlich's report, the work of visiting the law schools has been continued. In pursuance of our policy of concentrating responsibility upon a single member of the staff, four successive trips were made by him during the year: in October to western New York and Maine; in November and December to Wisconsin and Iowa and the states adjoining; in January and February to western Pennsylvania, West Virginia, Kentucky, Tennessee, Indiana, and Ohio; in March and April to Michigan and Chicago. As a result of these expeditions, combined with a long journey made during the first half of 1914 thru the South and the Far West, every surviving white resident law school in the United States, founded prior to 1913, is believed now to have been visited, with the exception of a small group on or near the Atlantic coast. It should be noted, however, that the omitted institutions include several of the largest and most important in the country. The visitation of these has purposely been left until the last; partly to meet an objection frequently voiced at the beginning of the enquiry that we were liable to accept ready-made the standards of a few strong schools, and attempt to impose these upon the rest of the country; partly also for the very homely reason that the inspection of a school is an art of no small difficulty, the rudiments of which can best be acquired by beginning with the smaller and easier cases.

It is a time-taking operation, at best, picking out what seem to be the salient

characteristics of a law school. Four weeks, for instance, were spent in San Francisco, in the effort to do justice to the nine law schools in that city and its immediate vicinity. In Chicago, which, besides boasting nine resident schools, is the principal centre of the correspondence school movement in law, a full month proved to be none too long a period. In order to shorten the field work as much as possible, special blanks had been prepared, covering such matters as registration, finance, and library facilities, that may be readily expressed in statistical form. These blanks have usually been left with the institutions to be forwarded at their leisure. Since leisure is not a common commodity in the law school world, and since part of the information requested calls for an unusual amount of time and clear-headedness, this portion of our work has been peculiarly vexatious both to the schools and to the Foundation.

A difficulty that is especially marked in the case of law schools is the determination of what schools actually exist. In medicine and engineering a certain amount of capital is required in order to provide even inadequate laboratory facilities. Any young lawyer, however, may hold himself out as competent to prepare applicants for admission to the bar; and since an enterprise thus entered upon may be as lightly abandoned, nothing like a comprehensive list of mere cram classes could of course be attempted. These private classes shade off by infinitesimal gradations, however, into more ambitious projects, all the way up to the most highly developed institutions, so that, even when the facts are known, the question of where to draw the line, of "when is a school not a school?" is by no means easy to answer.

The principle adopted by the Foundation has been to pay especial attention to resident institutions conferring degrees, and to treat in more general fashion other resident "schools" announcing themselves as such, and correspondence schools of either description. No attempt has been made to enumerate, on the one hand, mere classes which prepare for the bar, nor, on the other hand, courses offered in business and commercial law only. Moribund institutions have been disposed of (in accordance with the most approved modern theories of legal education) not upon any preconceived plan, but as the exigencies of the individual case seem to demand. Thus, to cite a typical close decision, the Minneapolis College of Law, which has an independent charter, and a brass doorplate, but no students and no apparent expectation or likelihood of obtaining any, is considered as defunct. On the other hand the School of Law of Angola, Indiana, which has neither charter, doorplate, nor students, but does have four pages in the annual catalogue of Tri-State College, is classified as alive. Experts in the case method will doubtless be able, from this statement of facts, to "extract the principle."

Appended to this section will be found what is believed to be the most authoritative list of law schools ever published in the United States, at least since the growth of these schools reached its modern efflorescence. While comparison of our list with that of the United States Commissioner of Education shows numerous points of difference due to our attempt to follow and verify every possible clue, it is only proper

to state that without the invaluable work of the Commissioner as a basis, no such list could have been prepared. Its publication at this time will, it is hoped, cause omissions or other errors to be brought to our notice.

Parallel with the study of law schools is our attempt to correlate legal education proper with the conditions that it has to face, and with the general movement in this country, extending now over a long term of years, to better both the schools and these fundamental conditions. Twenty special workers, including both practising attorneys and teachers, among whom were five present or former deans of law schools, have collected for us detailed information in regard to requirements for admission to the bar in all the states, and valuable statistics from every state where sufficient records exist, and from many states where the records are sadly insufficient. The task of compressing this mass of information within reasonable limits has been steadily prosecuted throughout the year, and two of the points involved have been specially treated. Three law school men, representing institutions of highly divergent types, and one experienced bar examiner, who had assembled at our invitation during the summer of 1914 for the purpose of inspecting our collection of bar examination questions, were able to agree upon a statement of the general principles that should underlie the framing of these tests. With a view to obtaining a broader expression of opinion, this statement has been submitted confidentially to a carefully selected list of school men and examiners, from whom helpful comments have been received. Our procedure in this case is typical of the general spirit of our enquiry. We cannot expect to speak the final authoritative word in regard to every technical detail connected with the education of attorneys and their admission to practice. We do hope, by proceeding slowly, and inviting comment and advice from many different sources, to make a few fruitful clearings among the deadwood and the tangled growth, the maze of formula, precedent, and rule, with which this field is at present encumbered.

Special action of a somewhat unusual kind has also been taken recently upon the grading of bar examination papers. Efforts to secure typical student answers from all the states developed unexpected difficulties. In some states the examinations are entirely oral. In others the answers are either at once destroyed under formal rule, or are never preserved under decidedly informal procedure. And in still others the examiners evinced a not unnatural reluctance to having the most secret portions of their activities exposed to a possibly hypercritical scrutiny. Thus, while several of the boards, meeting our advances in a spirit of broad-minded coöperation, gave us exactly what we desired, others either refused outright or furnished material of little significance: the very best and the very worst answers handed in, or answers to only part of the examination, or answers with no indication as to the board's own grading. All told, counting in the good material with the trash, more than a hundred answer papers, from twenty-seven states, were finally turned over to the 1914 conference, to do with as it pleased in connection with the much fuller collection of questions. The conference, without minimizing the importance of a sound method of

grading, confined itself, as already stated, to a consideration of the question papers, reporting that it did not have the time, and that it doubted the feasibility of attempting, to review the grading of student answers.

For a time we were tempted to leave the matter in this shape, as one that could better be treated, perhaps, by the bar associations of the several states, more competent in some ways to handle it than any general committee could be, because more familiar with the precise law of their jurisdictions. In view, however, of the fundamental importance of the topic and of the acute form which discussion regarding it has assumed in one important state, we have recently taken it up again in an entirely different manner.

By the courtesy of the Examining Board of this state, we have been enabled to make four copies of a representative selection of applicants' answer papers in two recent examinations. Four prominent law school men, purposely selected this time to represent a substantially identical point of view, have held a preliminary meeting in our offices to discuss the points of law involved in the questions, and now promise to grade these papers for us each in accordance with his own judgment, without knowledge of the name or record of the individual applicant. The original marks given by the Examining Board will then be inspected and a comparison made between the results secured by these five independent gradings of identical answers.

What this experiment will amount to cannot be foretold with any confidence. The application to human activities of laboratory methods appropriate to the natural sciences rarely yields convincing and practically useful results. The subject-matter is too subtle, the immediate activity which is being investigated is too hard to isolate, the immediate actor is too prone to act unnaturally under artificial conditions. Professor Redlich has done us all a service in emphasizing that the virtues of the case method must be found in the fact that it is a source method and a disciplinary method, but not a laboratory method at all—that there is no real analogy between law and physical science. To set four law school men and one Board of Bar Examiners to work upon identical groups of answer papers with the hope of results as conclusive as can be obtained when successive reagents are applied to a chemical compound in a test tube, would be to belittle the importance and the dignity of human nature. Within the necessary limitations imposed by sanity, however, the experiment, if it succeeds, should throw a flood of light not merely upon the methods of grading employed in this particular state, and not merely upon bar examinations or law examinations in general, but also upon our entire theory of education. The individual distinction of the participants in this experiment will give added importance to its results. If their five series of gradings, or a majority of them, prove to be in substantial harmony with one another, our prevailing reliance upon the adequacy of written examinations will be powerfully supported. If, on the other hand, numerous and irreconcilable discrepancies should appear, we may have to revise some of our fundamental assumptions.

LIST OF LAW SCHOOLS IN THE UNITED STATES
ONE HUNDRED AND THIRTY-EIGHT RESIDENT SCHOOLS
CONFERRING DEGREES

ALABAMA

Tuscaloosa University of Alabama, School of Law

ARKANSAS

Little Rock Arkansas Law School

CALIFORNIA

Berkeley University of California, School of Jurisprudence
Los Angeles University of Southern California, College of Law
 Southwestern University, Law School
Oakland Oakland College of Law
San Francisco Hastings College of the Law
 St. Ignatius University, Law Department
 San Francisco Law School
 San Francisco Y. M. C. A., Evening Law College
Santa Clara University of Santa Clara, Institute of Law
Stanford University Leland Stanford Junior University, Law School

COLORADO

Boulder University of Colorado, School of Law
Denver University of Denver, School of Law
 Westminster College, School of Law

CONNECTICUT

New Haven Yale University, Department of Law

DISTRICT OF COLUMBIA

Washington Catholic University of America, School of Law
 Georgetown University, School of Law
 George Washington University, Law School
 Howard University, School of Law (*colored*)
 National University, Law School
 Oriental University, Law School
 Potomac University, Law School
 Washington College of Law

FLORIDA

De Land John B. Stetson University, College of Law
Gainesville University of Florida, College of Law

GEORGIA

Athens University of Georgia, Law Department
Atlanta Atlanta Law School

Macon Mercer University, Law School

IDAHO

Moscow University of Idaho, College of Law (Idaho Law School)

ILLINOIS

Bloomington Illinois Wesleyan University, College of Law
Chicago Chicago Law School
Chicago-Kent College of Law
De Paul University, College of Law (Illinois College of Law)
Hamilton College of Law
John Marshall Law School
Loyola University, Department of Law
Northwestern University, School of Law (Union College of Law)
University of Chicago, Law School
Webster College of Law
Springfield Lincoln College of Law
Urbana University of Illinois, College of Law

INDIANA

Angola Tri-State College, School of Law
Bloomington Indiana University, School of Law
Danville Central Normal College, Law School
Indianapolis Benjamin Harrison Law School
University of Indianapolis, Indiana Law School
Muncie Muncie Normal Institute, Department of Law
Notre Dame University of Notre Dame, College of Law
Valparaiso Valparaiso University, Department of Law

IOWA

Des Moines Drake University, College of Law
Iowa City State University of Iowa, College of Law

KANSAS

Lawrence University of Kansas, School of Law
Topeka Washburn College, School of Law

KENTUCKY

Lexington State University of Kentucky, College of Law
Louisville Jefferson School of Law
State University Central Law School (*colored*)
University of Louisville, Law Department

LOUISIANA

Baton Rouge Louisiana State University, Law School
New Orleans Loyola University, Law Department
Tulane University, Department of Law

MAINE

Bangor University of Maine, College of Law

MARYLAND

Baltimore University of Maryland, Law School

MASSACHUSETTS

Boston Boston University, School of Law
 Boston Y. M. C. A., Evening Law School
 Suffolk Law School
 Cambridge Harvard University, Law School

MICHIGAN

Ann Arbor University of Michigan, Law School
 Detroit Detroit Technical Institute, Detroit College of Law
 University of Detroit, Law School

MINNESOTA

Minneapolis Minnesota College of Law
 Northwestern College of Law
 University of Minnesota, Law School
 St. Paul St. Paul College of Law

MISSISSIPPI

Millsaps Millsaps College, Millsaps Law School
 Oxford University of Mississippi, Department of Law

MISSOURI

Columbia University of Missouri, School of Law
 Kansas City Kansas City School of Law
 St. Louis Benton College of Law
 City College of Law and Finance
 St. Louis University, Institute of Law
 Washington University, Law School (St. Louis Law School)

MONTANA

Missoula University of Montana, Department of Law

NEBRASKA

Lincoln University of Nebraska, College of Law
 Omaha Creighton University, College of Law
 University of Omaha, Omaha Law School

NEW JERSEY

Newark New Jersey Law School

NEW YORK

Albany Albany Law School (Union University, Department of Law)
 Buffalo University of Buffalo, Department of Law

Ithaca	Cornell University, College of Law
New York City	Brooklyn Law School (St. Lawrence University, Department of Law)
	Columbia University, School of Law
	Fordham University, Law School
	New York Law School
	New York University, Law School
Syracuse	Syracuse University, College of Law

NORTH CAROLINA

Chapel Hill	University of North Carolina, School of Law
Durham	Trinity College, Law School
Wake Forest	Wake Forest College, School of Law

NORTH DAKOTA

Grand Forks	University of North Dakota, Law School
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OHIO

Ada	Ohio Northern University, College of Law
Cincinnati	Cincinnati Law School
	Cincinnati Y. M. C. A., Night Law School
Cleveland	Cleveland Law School (Baldwin-Wallace College)
	Western Reserve University, Franklin Thomas Backus Law School
Columbus	Ohio State University, College of Law
Toledo	St. John's University, Department of Law
	Toledo University, College of Law

OKLAHOMA

Norman	University of Oklahoma, School of Law
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OREGON

Eugene	University of Oregon, Law School
Portland	Northwestern College of Law
	Oregon Law School
	Portland Law School
Salem	Willamette University, College of Law

PENNSYLVANIA

Carlisle	Dickinson College, Dickinson School of Law
Philadelphia	Temple University, Department of Law
	University of Pennsylvania, Law School
Pittsburgh	Duquesne University of the Holy Ghost, School of Law
	University of Pittsburgh, Pittsburgh Law School

SOUTH CAROLINA

Columbia	University of South Carolina, School of Law
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SOUTH DAKOTA

Vermillion University of South Dakota, College of Law

TENNESSEE

Chattanooga	Chattanooga College of Law
Knoxville	University of Tennessee, College of Law
Lebanon	Cumberland University, Law School
Memphis	University of Memphis, Law School
Nashville	Vanderbilt University, Law School
	Walden University, Law Department (<i>colored</i>)

TEXAS

Austin University of Texas, Department of Law

UTAH

Salt Lake City University of Utah, School of Law

VIRGINIA

Charlottesville	University of Virginia, Department of Law
Lexington	Washington and Lee University, School of Law
Richmond	Richmond College, Law School

WASHINGTON

Seattle	University of Washington, School of Law
Spokane	Gonzaga University, Department of Law
Tacoma	Tacoma School of Law

WEST VIRGINIA

Morgantown West Virginia University, College of Law

WISCONSIN

Madison	University of Wisconsin, Law School
Milwaukee	Marquette University, College of Law

TEN RESIDENT SCHOOLS NOT CONFERRING DEGREES

CALIFORNIA

San Diego	San Diego School of Law
	San Diego Law School
San Francisco	Kent Law School

MASSACHUSETTS

Boston	Portia School of Law
Cambridge	Cambridge Law School for Women

OHIO

Columbus	Columbus Evening Law School
Youngstown	Youngstown Y. M. C. A., School of Law

THE DIVISION OF EDUCATIONAL ENQUIRY

TEXAS

Dallas	Dallas Law School
Houston	Houston Y. M. C. A., Night Law School

VIRGINIA

Norfolk	Norfolk Y. M. C. A., School of Law
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SEVENTEEN CORRESPONDENCE SCHOOLS

CALIFORNIA

Los Angeles	American Extension University, Department of Law
San Francisco	Modern School of Business and Correspondence, Course in General Law

DISTRICT OF COLUMBIA

Washington	¹ Oriental University, Law School
	¹ Potomac University, Law School

ILLINOIS

Chicago	American Correspondence School of Law
	American School of Correspondence, Department of Law
	Blackstone Institute
	Chicago Correspondence School of Law
	¹ Hamilton College of Law, Correspondence Department
	La Salle Extension University, Department of Law
	McKinley University, College of Law (Standard College of Law)
	National Correspondence School of Law

INDIANA

Indianapolis	National Correspondence School of Law
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IOWA

Oskaloosa	Oskaloosa College, School of Law
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MINNESOTA

Minneapolis	University Extension Society, Department of Law
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NEW YORK

New York	National Eclectic Institute, School of Law
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OHIO

Rogers	Carnegie College, Law Department
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¹ Also offer residence work.

ENGINEERING EDUCATION

DURING the year the study of engineering education that the Foundation has undertaken in coöperation with the Joint Committee of the National Engineering Societies has developed along four main lines.

First, an effort has been made to discover what were the conditions and forces that made necessary the establishment of engineering schools in the United States. The published histories of the origins of a number of these institutions give much valuable information concerning the specific conditions in individual cases. The memorials, petitions, and committee reports among the federal and state documents throw much light on the manner in which the need for this type of schooling was gradually recognized and defined by the people themselves. The records of agricultural societies and mechanics institutes of various kinds reveal the means adopted by the people to meet this need; and the story of the actual development of these schools since their foundation is a tale of struggle for and gradual achievement of a high ideal.

Second, an appeal has been made to the practical experience and mature judgment of the engineering profession thru personal interviews and circular letters, with the hearty coöperation of the Joint Committee and the National Engineering Societies. As a result, considerable progress has been made in defining the actual conditions which an engineering graduate must face, and the purposes that the schools should set before themselves when training young men to meet these conditions.

Thru the courtesy of the General Electric Company at Schenectady and the Westinghouse Electric and Manufacturing Company of Pittsburgh, much valuable information has been secured from a detailed study of the records of their student apprentices. These records show that the various institutions exhibit marked differences in correlation between the technical knowledge that the school gives and those qualities that the employers consider fundamental, such as enthusiasm, common sense, initiative, and ability to handle men and to push things. These records are also being correlated with the college records of the same men for the purpose of comparing academic standards of efficiency with those of the commercial world.

Third, a list was made of the engineering schools, and these were divided, on the basis of a study of their catalogues, into several groups, such as Individual Engineering Schools, Agricultural and Mechanic Arts Colleges, and Universities with Engineering Schools. From these groups about twenty-five typical schools were selected for detailed study. Fifteen of these have been visited during the year, their aims and purposes discussed, their records analyzed, and their methods of administration and instruction studied. As a result of this work, a large amount of data has been collected, the final analysis of which cannot be made until all the schools selected have been visited.

The schools differ so widely in organization and methods of instruction that a subjective estimate of the relative educational value of different practices would be

both inadequate and of little practical use. There is, however, great need for objective methods of comparing the relative successes of various types of instruction. Such objective methods of measurement might also be of great service in reducing the heavy mortality in engineering schools by making possible a better selection of material at entrance. The demonstration that it is possible to find objective tests that measure increase in engineering ability more accurately than do the examination methods now in use would turn the attention of the schools to the necessity for impartial self-investigation and furnish them suggestions as to how to go about it.

Fourth, in carrying out the plan of furnishing the school the tools for more objective self study, the Foundation has been fortunate in securing the assistance of Edward L. Thorndike of Columbia University, who is devising new types of tests, and is engaged in determining by experiment what information they really give us and what conclusions may safely be drawn from them. In this work a special committee on tests, consisting of E. B. Katte representing the Electrical Engineers, J. W. Roe representing the Mechanical Engineers, and L. D. Norsworthy representing the Civil Engineers, is coöperating with Professor Thorndike by criticizing and making suggestions from the point of view of the engineering profession. Several engineering colleges and several corporations that employ large numbers of engineering graduates have been consulted concerning the objective tests; all recognize the limitations of present methods of examination and are eager to furnish facilities for the experimental work of testing the tests.

STUDY OF THE TRAINING OF TEACHERS IN MISSOURI

In pursuance of its plan for a consideration of the training of teachers in Missouri, as outlined in the Ninth Annual Report, the Foundation has been actively engaged during the year in gathering material from all available sources. The undertaking was auspiciously initiated at Jefferson City on November 28, 1914, with a conference at which, by invitation of the governor, about a hundred persons prominent in the state's educational work met to hear and to discuss the proposed enquiry. These gave the plan their hearty approval and support.

In its endeavor to relate the work of the institutional agencies for the preparation of teachers as closely as possible to the situation actually prevailing in the state, the Foundation has sought first to define this situation with accuracy. Theoretically, this should be a simple matter, however laborious and expensive; practically, it has proved to be no small task to convince a considerable proportion of those concerned that the facts regarding their training and service are legitimate subjects of enquiry even for anonymous statistical purposes. The idea that where public service is concerned the individual may properly withhold information as to conditions that vitally affect the quality of that service is still current. The state department of public

schools has indeed legal authority to require reports from school officers, but there being no effective lever for enforcing the requirement, the annual reports from these sources are neither significant, nor comprehensive. Oddly enough, that unwillingness to facilitate an exact analysis of the body of instructors is most marked in the large cities, where one would expect such analysis to have become a matter of course. Here, instead of the acknowledged propriety of complete frankness in such matters and an intelligent exhibit of the important characteristics of the teaching personnel with a view to its gradual improvement, one finds the situation obscured by protestations of personal privilege on one side and official timidity and uncertainty on the other. Such conditions ought certainly to be cleared up. The time, place, and character of a teacher's training; the amount, the circumstances, and the products of his experience are, next to direct tests of his ability, the most important facts about him. In the case of a given individual teacher some of them may have slight importance; taken together as a criterion of the general level of a group of teachers, however, they become a valid and indispensable aid. To these facts the public has an undoubted right by virtue of its supreme interest in every teacher's performance. The future development of education among us is bound up in great measure with the thoroughness and discretion with which both state and local authorities gather and use this information. A partial knowledge based upon a study of typical sections in selected districts is inadequate. To guide its policy and to direct its various training agencies, a state must be aware of the complete dimensions of its problem in specific terms; only so can individual communities receive the appropriate direction and support which is their due, and only so can their progress be measured.

The process of gathering this material has led here and there to the conclusion that deductions for the study were to be made after the usual questionnaire procedure. This is not the case. A set of random and voluntary replies as a basis for conclusions is of little value here, whatever its worth under other circumstances. The Foundation has rather in mind the completest possible inventory of the state as respects the training of teachers and school officers, in the hope that having once thus taken stock, even tho imperfectly, the state, like any thrifty shop-keeper, may make the process in still better form a permanent feature of its educational program.

In its institutional phase the study is well advanced. Representatives of the Foundation have visited all of the state normal schools and the state university. They have received cordial and sympathetic coöperation at well-nigh every point, and are amply convinced that the collation of the experiences discussed with them by these educators of teachers in Missouri will be of value at large as well as within the state.

EDUCATION IN VERMONT

THE Study of Education in Vermont, which was published as the Seventh Bulletin of the Foundation in 1913, and the Report, in 1914, of the Commission to Investigate the Educational System and Conditions of Vermont, for which the Foundation's Study was made, were the source and occasion of a considerable amount of educational legislation by the Vermont General Assembly of 1915. It will be suggestive of the legislative outcome that may be expected of such studies to compare the recommendations of the Foundation's Study and the Commission's Report with the measures that were enacted into law. The complete results of such undertakings are, of course, not to be measured solely by legislative action. Only one of the recommendations of the Virginia Educational Commission of 1912 has been enacted into law, but competent judges agree that the report of that commission has been one of the most influential documents ever issued in the state, and that most of its suggestions have been realized, directly or indirectly, without legislation.

The primary recommendation for Vermont of the Foundation and the Commission, namely, "The recognition by the state of the reorganization of elementary and secondary education, including vocational training, as its immediate and supreme duty," was accepted and adopted by the legislature in full. The recommendations for bringing this reorganization about thru a representative state board of education, working thru an expert commissioner, with competent assistants and facilities, and thru the multiplication of agencies for the training of teachers, were also adopted. Indeed, the twenty-two educational bills that were passed and approved went considerably further than the Foundation's suggestion in enacting into law many items that the Foundation commended simply as measures of administrative policy.

The recommendation that the public educational system of the state be placed under the supervision and management of a state board of education of five members, appointed by the governor for five-year terms, was carried out in detail. The recommendation that the members be representative citizens not otherwise engaged in educational matters was followed in making the appointments. Instead of the recommendation that the members serve without pay, a compensation of four dollars a day for time actually expended is allowed.

The recommendation that the increased powers of the state board be carried out thru a Commissioner of Education of special training and experience, appointed by the board for an indefinite term, at an adequate salary fixed by it, was adopted in full. The commissioner is to have competent assistants, and is to employ a number of trained and capable supervisors, with salaries fixed and paid by the state, to spend their time in the schools assisting the teachers and demonstrating methods of instruction. For such administration \$24,000 a year is appropriated instead of the \$8571 customary at the time the Foundation made its study. Local superintendents also, who are trained educators, are to be appointed for indefinite terms by the state board,

with salaries fixed by the board and paid by the state. For this purpose \$100,000 annually is appropriated as compared with the earlier expenditure of \$55,000.

With this machinery the state board, thru the commissioner, is to supervise an adequate school census, enforce all educational laws, prepare and promulgate courses of study for elementary schools, for state-aided high schools, teachers training classes, and normal schools; provide for the examination and certification of teachers, supervise the expenditure of the state school money, and inspect all institutions in which it is spent; and is to fix the forms for teachers contracts, school registers, and school board, town clerks, superintendents, principals, and teachers reports. Text-books and supplies must be approved by the superintendents. Finally, the board is to provide a method of educational publicity whereby the people throughout the state may be informed of educational conditions and opportunities. The medical inspection of schools and pupils is left under the direction of the State Board of Health, but the functions of the school nurse are recognized.

In the matter of finances the state school tax is increased from eight to ten per cent on the grand list, which is one per cent of the assessed valuation, and the annual additional appropriation from general state funds is increased from \$50,000 to \$130,000 annually. The towns themselves are required to levy a local school tax of at least forty per cent on the grand list, instead of the previous twenty per cent. By means of the administrative arrangements that have been mentioned, the expenditure of these greatly augmented local school funds will be under the guidance of the state board. The distribution of state school money is to be under the immediate direction of the board, and to be no longer upon a largely per capita basis, but primarily in the form of reward for and coöperation with educational endeavor. Hereafter all teachers must be paid by the towns at least eight dollars a week, and the state will pay in addition from two dollars a week to each teacher in the rural schools who has had three years of high school and one year of professional training, to four dollars a week to each teacher who has had four years of high school and two years of professional training. For these additions to salaries \$110,000 annually is appropriated. The state board will also aid in the expense of providing all vocational courses in high schools. No town, town clerk, or teacher will receive state school money unless his educational reports are satisfactory. Towns are empowered to pension teachers from their own funds, and a State Teachers Retirement Fund is secured by contributions of teachers and others and the duplication by the state of the teachers' contributions.

The school year is extended from thirty to thirty-four weeks. The towns are empowered to introduce, under the direction of the state board, the differentiation of junior and senior high schools, with vocational courses, which was recommended. For these purposes the state appropriation for the transportation and board of non-resident pupils is increased from \$20,000 to \$100,000 a year, and the regulation of such matters is placed under the direction of the local superintendents, and ultimately of the commissioner.

For vocational education there is to be a supplementary reader on Vermont's industries and resources for the elementary schools, and vocational work of every appropriate sort is to be developed in the high schools under the planning and supervision of the state board, which will appoint the teachers and aid in the provision of funds. Towns are also empowered to maintain evening schools for adults. The agricultural school at Randolph is to have \$12,000, instead of \$10,000, a year; the splendid property presented to the state by the Hon. Theodore N. Vail, a member of the Educational Commission, is accepted, and \$20,000 annually is provided for its maintenance as an agricultural school.

With regard to the training of teachers, the state board is given an appropriation, which is increased from \$18,745 to \$45,000 a year, to carry out the Foundation's and the Commission's recommendation to develop training classes for elementary school teachers in a number of high schools sufficient to provide enough trained teachers to meet the state's annual demand. This result, which is already in sight, will give Vermont the almost unique position among our states of having none but trained teachers in her schools. For educational gatherings, institutes, summer schools, and other supplementary educational activities there is appropriated \$2500 a year, instead of \$1800. The normal schools, which seemed to the Foundation so unpromising that it recommended their abandonment, are continued for the present; but their courses of study and their additional aggregate appropriation of \$5000 a year are placed under the direction of the state board; and the state board is empowered to carry out, whenever funds are available, the Foundation's suggestion concerning the eventual establishment of a single central normal school or school of education. Provision for the training of high school teachers at Middlebury College is continued.

The legislature did not adopt the recommendations concerning higher education that were made by the Foundation and the Commission, altho their estimate of the situation was recognized and met in a different way. The Foundation's argument in this matter was based upon three opinions—that the state's expenditure for education was necessarily limited; that it should, therefore, appropriate no money to higher education until the needs of the public schools were fully met; and that it should appropriate no money whatever to institutions that it did not own and control. These opinions led to the suggestions that the entire amount hitherto appropriated for educational purposes should in the future be given to the public school system alone, and that nothing should be given the higher institutions, since they were not owned and controlled by the state, and since they had until recently done very well without state aid.

These arguments do not seem to have met with the full approval of the legislature. It enlarged the total educational appropriation to such an extent that the public schools will now receive considerably more than if the appropriation for higher education alone had been transferred to them. Without regard to whether the ownership and control of the University of Vermont was in the state or otherwise, the

legislature continued its appropriations to that institution and granted an increase of \$6500 a year for the College of Medicine which, in the opinion of the Foundation, can never command adequate clinical facilities. The previous appropriation to Middlebury College was also continued and made annual without change in the amount; that of Norwich University was continued and made annual with a slight reduction. Both, however, are to be spent in the future under state regulation. For the former institution there is created "A Board of Trustees of Public Funds of Middlebury College," having three members appointed by the governor for two-year terms, who are to meet twice a year at the college to audit its accounts and supervise its expenditure of the state funds, and report their findings and recommendations to the governor. For Norwich University the same functions are to be performed by a "Board of Administration," composed of the auditor of accounts, the adjutant-general, and one person appointed by the governor for an indefinite term. This board is required in addition to make such inspections as shall assure them an intimate knowledge of the affairs of the institution. As any illumination of the problem of state aid to privately controlled institutions is more than welcome, the operation of these boards will be watched with interest. The precedent for their working well in Vermont is not, however, very good. Neither the Board of Trustees of the University of Vermont nor the Board of Visitors of Norwich University have been in the habit of reporting to the legislature, altho they were required by law to do so.

In another less important altho scarcely less suggestive matter, the conclusions of the legislature were different from those of the Foundation. It was suggested by the Foundation that the new State Board of Education might well take over and concentrate the functions of half a dozen other state educational boards. While large powers and responsibilities have been given to the new Board of Education, these other bodies, with somewhat duplicating and conflicting duties, are all continued, so that the permanent school fund, the state schools of agriculture, the public libraries, instruction for the deaf and blind, the school for feeble-minded children, and the penal industrial school are all in different hands. The sundry acts which continued and developed these boards, which made the Board of Education report to the legislature instead of to the governor, which emphasized the town rather than the district system for schools, and which enacted a score of educational bills with three hundred sections rather than a single act or two entrusting details to the State Board, all go to show that the legislators and probably the people of the state still prefer extreme differentiation with all of its obvious defects, to the equally obvious economy and effectiveness of concentration, which, of course, is also accompanied by its limitations. It should, perhaps, have been said earlier that the Foundation felt that its obligation to the state of Vermont was fulfilled by the preparation of its Study and its presentation to the Commission. It had nothing to do with the formulation or promotion of the resulting legislation.

It is impossible to conclude this brief survey without a tribute to the serious

interest that the state has shown in the whole subject. It is not easy to be genuinely desirous for advice; it is still harder to profit from the painful privilege of seeing ourselves as others see us; but the attitude of the representatives of Vermont in seeking impartial investigation and expert guidance in so vital a matter as its entire educational system, and the attitude of the people of the state in receiving the information and suggestion that was sought and of the legislature in acting upon it, have been praiseworthy in the extreme. Some of the facts presented and some of the recommendations made inevitably wounded the pride and threatened the projects of some localities, institutions, and individuals, and this became sufficiently evident in public discussion, but the ability to consider measures for the public welfare in a large, unselfish way was abundantly displayed, and the resulting mass of legislation alone constitutes a really distinguished proof of the perspicacity and public spirit of the representatives and the people of Vermont. I know of few single bodies of educational legislation that contain so much enlightenment, and it promises well for the success of the far more difficult task of putting it into operation. Already the experience and the example of Vermont have become influential in other states.

The Carnegie Foundation considers it a privilege to have coöperated in a movement that has already resulted so well, and feels amply repaid for the time and thought and money that were expended upon its Study of Education in Vermont.

COLLEGE CHARGES FOR TUITION

THE charge made for tuition by our representative universities and colleges has increased by about one-fifth during the last ten years. The tendency to increase was active ten years ago, but it was checked by the general financial disturbances of 1907. Since that time it has developed steadily, so that the last four years represent more than half of the advance during the decade. During the present year, following the recent examples of Columbia and Yale, the fee at Princeton has been increased from \$160 to \$175, and next year the Harvard fee of \$150, which has remained unchanged since 1869, will be increased to \$200.

The table on pages 44, 45, gives the charges for tuition reported by each of one hundred representative institutions for each of the years from 1906 to 1915, inclusive. The table on the opposite page, by grouping the fees of the same size together, indicates that the representative or median fee has increased, during the decade, from about \$80 to about \$100.

It is to be noted that the fees given in each case are for the representative part of the institution, such as the college at Columbia, Harvard, Princeton, and Yale. These fees are not to be compared with the higher charges made for the technical curricula which are characteristic of the Massachusetts Institute of Technology, Rensselaer Polytechnic Institute, Stevens Institute of Technology, or Worcester Polytechnic

Institute. The institutions for which academic fees are given all charge more for their professional and technical work.

COLLEGE CHARGES FOR TUITION ARRANGED ACCORDING TO SIZE

Number of fees	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
\$250	1	1	1	1	1	1	1	1	1	1	10
220-229	-	-	-	-	-	-	-	1	1	1	3
200-209	3	3	3	3	3	4	4	4	4	4	35
190-199	-	-	-	-	-	-	-	-	-	1	1
170-179	1	1	1	1	1	1	1	1	2	1	11
160-169	-	-	-	-	-	1	1	1	1	2	6
150-159	14	16	16	18	18	17	17	16	17	16	165
140-149	1	1	1	1	2	2	3	4	3	3	21
130-139	-	-	-	1	1	1	1	-	-	-	4
120-129	5	6	7	5	5	5	5	8	6	8	58
110-119	1	1	1	1	-	-	1	3	3	3	14
100-109	16	13	12	13	14	15	16	13	13	14	139
90-99	2	3	3	3	3	5	5	4	4	4	36
80-89	5	5	5	4	4	3	1	2	2	2	33
70-79	11	11	11	10	9	7	7	9	9	7	91
60-69	6	5	5	5	5	5	8	7	7	7	60
50-59	4	6	6	7	9	9	6	5	4	3	59
40-49	4	4	5	4	4	3	2	2	3	3	34
30-39	7	5	4	4	2	2	3	3	2	2	34
20-29	2	2	2	2	2	2	1	1	1	1	16
10-19	2	2	2	2	2	2	2	2	2	2	20
0	15	15	15	15	15	15	15	15	15	15	150

Fifteen of the one hundred institutions report no charge for tuition at any time during the last ten years. Except for Leland Stanford Junior University, these are all institutions that are supported by public funds,—Indiana University, Iowa State College, Miami University, Pennsylvania State College, and the Universities of California, Georgia, Illinois, Maine, Missouri, Nebraska, Oregon, Texas, Virginia, and Washington. It is to be noted, however, that these institutions which charge no “tuition” fees require considerable “contingent,” or “incidental,” charges from all students annually,—\$18 at Indiana, \$20 at Maine, \$24 at Illinois, \$30 at Miami, \$39 at Leland Stanford, and so on. The idea that state institutions make no charge whatever for instruction is thus largely theoretical.

Twenty-nine other institutions made no change in their charges during the last ten years. Of these, three state universities made only a nominal charge for tuition,—Kansas, \$10; South Dakota, \$12; and Iowa, \$20. At a number of smaller institutions, also, whether supported privately or by the state, the fees have been small,—Wabash, \$47; Clark College, \$50; Colby, Colgate, and North Carolina, \$60; Trinity (N. C.), \$68; Bates and Kenyon, \$75. A charge of \$100 was made throughout the decade by four institutions,—Clark University, Clarkson, Lafayette, and Trinity (Conn.). The University of Chicago has charged \$120 throughout for three quarters, the equivalent of an academic year elsewhere. The most popular fee among those institutions that have made no change is the \$150 which has been charged by Har-

vard, Haverford, Johns Hopkins, Pennsylvania, Swarthmore, Vassar, Washington University, and Worcester,—eight in all. Throughout the period, also, Brown has charged \$153, Wellesley \$175, Brooklyn Polytechnic and Radcliffe \$200, and the Massachusetts Institute of Technology \$250. The median fee among these institutions that have made no change is \$100, the average \$90.

The following table presents the median and the average fee, for each of the ten years, for the entire one hundred institutions, for the eighty-five that made some charge, and for the fifty-six that made some change in their fees, during the period.

COLLEGE CHARGES FOR TUITION

MEDIA, AVERAGES, AND CHANGES

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	In-crease	Per cent of In-crease
100 Institutions												
Median	76.75	79	79	79.25	80	90	98	95	100	100	23.25	30
Average	80.91	82.64	83.03	84.22	85.17	87.42	89.16	90.38	92.24	93.97	13.06	16
85 Institutions that make some charge												
Median	96	96	98	100	100	100	100	100	100	100	4	4
Average	95.19	97.22	97.68	99.08	100.20	102.85	104.90	106.33	108.51	110.55	15.36	16
56 Institutions that have changed												
Median	80	82.50	82.50	90	93	100	100	100	100	102.50	22.50	28
Average	86.72	89.80	90.50	92.63	94.33	98.34	101.45	104.03	106.94	110.03	23.31	26
83 Changes in Fees											Total	
Increases		10	4	8	5	9	10	10	13	11	80	
Decreases		1	-	-	-	-	-	2	-	-	3	
											83	
											29%	
											40%	
											53%	

Of the fifty-six institutions that made some change, three reduced their tuition charges, — Knox College from \$60 to \$50, Earlham College from \$77 to \$75, and the University of the South from \$100 to \$45. The reductions at Knox and at Earlham were accompanied by a corresponding increase in incidental fees. The reduction at the University of the South was accompanied by the abandonment by the bishops of twenty-one dioceses of their privilege of remitting the tuition fees of two students each year.

The practice of charging incidental fees in addition to tuition fees is so general that the statement of the tuition fee alone seldom indicates what the student will

be called upon to pay to the institution. The incidental fees are sometimes considerable, as at Lafayette, where incidental, library, student activities, and gymnasium fees amount to \$55 a year, or at Rutgers, where they amount to \$60. The practice is so misleading that several institutions speak of it as "the fiction of entering student charges under different heads," and there is a growing movement toward abandoning it. As for the relation between college charges and scholarships and other financial aid, the entire problem is urgently in need of attention.

The increases that have been made in the fees of the remaining fifty-three institutions bear little relation to the size of the initial charge.

Fees of

\$20 (1) became \$30.

\$30 (3) became \$45, \$50 or \$100; \$35 (2) became \$36 or \$60; \$36 (2) became \$64 or \$90.

\$40 (1) became \$80; \$47 (1) became \$70; \$49 (1) became \$64.

\$50 (1) and \$54 (1) became \$75; \$56 (1) became \$77.

\$65 (1) became \$80.

\$70 (1) became \$90; \$75 (6) became \$90 (2), \$100 (3), or \$125 (1); \$76.50 became \$100.

\$80 (4) became \$100 (2) or \$110 (2); \$85 became \$100.

\$96 (2) became \$111 (1) or \$120 (1).

\$100 (1) became \$105 (2), \$125 (5), or \$150 (3); \$108 (1) and \$110 (1) became \$140.

\$125 (4) became \$140 (1) or \$150 (3); \$140 (1) became \$150.

\$150 (4) became \$160, \$198, \$200, or \$225; \$155 (1) became \$160.

\$200 (1) became \$205.

The most popular fee in this group of institutions has thus become \$150 instead of \$100.

The amounts of increase are thus distributed:

There is one increase of \$1.

Four of \$5, three of \$10, one of \$12.

Seven of \$15, four of \$20, two of \$21, one of \$23, one of \$23.50, one of \$24.

Fifteen of \$25, one each of \$28, \$30, \$32, \$40, and \$48.

Five of \$50, and one each of \$54, \$70, and \$75.

The most frequent increases are thus \$25, \$15, \$50, \$20, \$5, \$30, and \$10,—even multiples of \$5. The most frequent is \$25, the median \$25, the average \$25.89.

The percentages of increase extend from $2\frac{1}{2}$ per cent, which represents an addition of \$5 to a \$200 fee at Rensselaer Polytechnic Institute, to $233\frac{1}{3}$ per cent, which

represents the enlargement of a fee of \$30 to \$100 at the University of Wisconsin. The various percentages of increase are thus distributed:

There is one instance each of $2\frac{1}{2}$, $2\frac{4}{5}$, $3\frac{1}{5}$; two of 5; one each of $6\frac{2}{3}$, 7, 12, 15, and 17.

Five of 20, one of 23, eight of 25, one each of 27, 28, and 29.

Two of 30, one of 32, four of $33\frac{1}{3}$, one of 37, two of $37\frac{1}{2}$, one of 38, one of 40, one of 48.

Six of 50, two of $66\frac{2}{3}$, one each of 71, 77, 100, 150, and $233\frac{1}{3}$.

The most frequent increases are thus by 25, 50, 20, or $33\frac{1}{3}$ per cent. The most frequent of all is 25 per cent, the median 30 per cent, the average 36 per cent.

Of the fifty-three institutions that increased their fees, thirty-seven did so by a single change. The fees most frequent in these institutions were \$100 (9), \$75 (4), \$125 (4), \$80 (3), and \$150 (3), the average being \$95, the median \$100. Their fees after the advance were most frequently \$150 (6), \$125 (5), \$100 (5), and \$90 (3), the median being \$111, the average \$117. The most frequent increases were thus \$15 (6), \$5 (4), \$20 (4), \$10 (3), and \$50 (3), the median being \$20, the average \$22.81. The percentages of increase were most frequently 25 (7), 20 (5), 50 (5), and $33\frac{1}{3}$ (3), the median being 25, the average 26.

The sixteen remaining institutions, beginning ten years ago with fees of \$30, \$35, \$36 (2), \$40, \$47, \$56, \$65, \$75 (2), \$76.50, \$80, \$96, \$100, \$108, and \$150,—an average of \$73.54, with a median of \$70,—now charge fees of \$60, \$64, \$70, \$77, \$80 (2), \$90, \$100 (3), \$110, \$120, \$125, \$140, \$150, and \$198,—an average of \$98.37, with a median of \$100. The average increase here is \$40, the median \$29. Beginning with a low fee, the percentage of increase is high, an average of 65, with a median of $43\frac{3}{4}$.

These sixteen institutions, generally with low fees, felt able to approximate their fees to those of other institutions only by a series of changes.

Nine of them—the Catholic University, Colorado, Columbia, Drake, Lake Forest, Northwestern, Rutgers, Washington and Jefferson, and Wesleyan—attained by two changes each advances from initial fees averaging \$80, with a median of \$75, to final fees averaging \$113, with a median of \$110. The average of the single advances was \$17, the median \$16, this representing an increase of about 20 per cent.

Four institutions—Beloit, Lawrence, Wisconsin, and Wooster—required three changes each to advance from an average fee of \$50 to an average of \$110, an increase of 120 per cent. The average of the single advances here was \$11.87, the median \$12, this being about 25 per cent.

Four changes were required by Carleton College to double its fee, from \$40 to \$80, and by Boston University to increase its \$100 fee by one-half to \$150.

Cornell College, Iowa, found it necessary in increasing its fee from \$47 to \$70,

or 48 per cent, to make five changes,—from \$47 to \$48, to \$50, to \$60, to \$66, to \$70.

The most promising element in the situation is the tendency toward inclusive fees. The incidental fees charged at Michigan and Purdue include all such items. At Bates, Brown, Hobart, Lake Forest, and Wooster the tuition fee includes all incidentals. At Stevens Institute it includes laboratory fees. At Trinity (N. C.) it includes matriculation.

Probably the most satisfactory system of fees is that which bases the charge upon the hours of instruction taken by the student. When to this system, which is in practice at Columbia, there is added, as at Yale, an inclusive fee for all other items, all of the demands of a simple and adequate system appear to be met. The plan is thus described in the report of the President of Yale for 1913-14:

"The tuition charges for undergraduate students are computed on the basis of forty dollars for each student per year, independent of the number of hours for instruction which he receives, plus eight dollars per hour of instruction per week per year. . . .

"The charge of forty dollars per student is computed as follows: twenty-five dollars for administrative expenses properly chargeable to each student registered, independent of the amount of work that he takes; five dollars for Library assessment, five dollars for Gymnasium assessment, and five dollars for departmental expenses independent of instruction. The charge of eight dollars per hour of instruction per year is based on an estimate of the average expenditures of the University for the actual teaching of its classes."

It may then be said, in summary, that the tuition charges of our representative institutions have increased during the last ten years from about \$80 to about \$100 a year, and that the tendency to advance fees is increasing. More than half of the institutions reporting have increased their fees, most frequently by about \$25. Some institutions have made several changes of about \$10 or \$15 each. State institutions that make no charge for tuition do, however, make considerable incidental charges, and such charges are made by other institutions in addition to the tuition that is charged. A considerable number of institutions are modifying their practice, because of the belief that the student's obligation will be clearer if all of these charges are grouped in an inclusive fee, which also covers tuition, on the basis of the number of hours of instruction that are taken.

THE DIVISION OF EDUCATIONAL ENQUIRY

COLLEGE CHARGES FOR TUITION ARRANGED ACCORDING TO INSTITUTIONS

	1906	1907	1908	1909	1910	1911	1912	1918	1914	1915
AMHERST COLLEGE.....	\$110	\$110	\$110	\$110	\$140	\$140	\$140	\$140	\$140	\$140
BATES COLLEGE.....	75	75	75	75	75	75	75	75	75	75
BELOIT COLLEGE.....	56	75	75	75	75	75	75	75	76	77
BOSTON UNIVERSITY.....	100	125	125	130	130	130	130	140	150	150
BOWDOIN COLLEGE.....	75	75	75	75	75	75	75	75	75	100
BROOKLYN POLYTECHNIC INSTITUTE.....	200	200	200	200	200	200	200	200	200	200
BROWN UNIVERSITY.....	153	153	153	153	153	153	153	153	153	153
CARLETON COLLEGE.....	40	40	40	40	40	50	60	75	75	80
CASE SCHOOL OF APPLIED SCIENCE.....	100	100	100	100	100	100	125	125	125	125
CATHOLIC UNIVERSITY OF AMERICA.....	75	75	75	75	75	75	100	100	100	125
CENTRAL UNIVERSITY OF KENTUCKY.....	50	50	50	50	50	50	50	50	75	75
CLARK COLLEGE.....	50	50	50	50	50	50	50	50	50	50
CLARK UNIVERSITY.....	100	100	100	100	100	100	100	100	100	100
CLARKSON SCHOOL OF TECHNOLOGY.....	100	100	100	100	100	100	100	100	100	100
COLBY COLLEGE.....	60	60	60	60	60	60	60	60	60	60
COLGATE UNIVERSITY.....	60	60	60	60	60	60	60	60	60	60
COLORADO COLLEGE.....	35	50	50	50	50	50	50	50	50	60
COLUMBIA UNIVERSITY.....	150	150	150	150	150	150	150	150	175	198
CORNELL COLLEGE.....	47	48	48	50	50	50	60	60	66	70
CORNELL UNIVERSITY.....	100	100	100	100	100	100	100	100	100	125
DARTMOUTH COLLEGE.....	125	125	125	125	125	125	125	125	140	140
DE PAUW UNIVERSITY.....	49	49	49	49	49	49	49	64	64	64
DRAKE UNIVERSITY.....	36	50	50	50	50	90	90	90	90	90
EARLIHAM COLLEGE.....	77	77	77	77	77	77	77	75	75	75
ELMIRA COLLEGE.....	125	125	125	150	150	150	150	150	150	150
FRANKLIN COLLEGE.....	54	54	54	54	54	54	54	75	75	75
GOUCHER COLLEGE.....	125	150	150	150	150	150	150	150	150	150
HAMILTON COLLEGE.....	75	90	90	90	90	90	90	90	90	90
HARVARD UNIVERSITY.....	150	150	150	150	150	150	150	150	150	150
HAVERFORD COLLEGE.....	150	150	150	150	150	150	150	150	150	150
HOBART COLLEGE.....	80	80	80	80	100	100	100	100	100	100
INDIANA UNIVERSITY.....	0	0	0	0	0	0	0	0	0	0
IOWA STATE COLLEGE.....	0	0	0	0	0	0	0	0	0	0
JOHNS HOPKINS UNIVERSITY.....	150	150	150	150	150	150	150	150	150	150
KENYON COLLEGE.....	75	75	75	75	75	75	75	75	75	75
KNOX COLLEGE.....	60	50	50	50	50	50	50	50	50	50
LAFAYETTE COLLEGE.....	100	100	100	100	100	100	100	100	100	100
LAKE FOREST COLLEGE.....	65	65	67	67	67	67	67	80	80	80
LAWRENCE COLLEGE.....	36	36	46	46	46	46	60	60	64	64
LEHIGH UNIVERSITY.....	150	150	150	150	150	200	200	200	200	200
LELAND STANFORD JUNIOR UNIVERSITY.....	0	0	0	0	0	0	0	0	0	0
MARIETTA COLLEGE.....	30	30	30	30	50	50	50	50	50	50
MASSACHUSETTS INSTITUTE OF TECHNOLOGY.....	250	250	250	250	250	250	250	250	250	250
MIAMI UNIVERSITY.....	0	0	0	0	0	0	0	0	0	0
MIDDLEBURY COLLEGE.....	80	80	80	80	80	80	80	80	80	100
MOUNT HOLYOKE COLLEGE.....	125	125	125	150	150	150	150	150	150	150
NEW YORK UNIVERSITY.....	100	100	100	100	100	100	100	100	125	125
NORTHWESTERN UNIVERSITY.....	80	80	80	100	100	100	100	110	110	110
OBERLIN COLLEGE.....	75	75	75	75	75	100	100	100	100	100
PENNSYLVANIA STATE COLLEGE.....	0	0	0	0	0	0	0	0	0	0

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[illegible]

PART III
PENSIONS

PENSIONS FOR PUBLIC SCHOOL TEACHERS

STATE SYSTEMS

THE development of pensions for public school teachers goes on apace. State after state is beginning to recognize that it cannot lag behind its neighbor if it is to retain its teachers. The realization is spreading rapidly that teachers are underpaid, that the demands on the little that they earn are great, that for their present peace of mind some provision must be made to assist them in the future, that a pension system tends to secure stability in a profession, and so on. And in addition to the many sound and generally accepted arguments for pensions there are also injected tragic and pathetic appeals to save the old teacher from the poorhouse, and, as in the folder issued in the Michigan campaign, help her to live in comfort and retirement on \$300 a year! It is interesting to notice throughout the campaigns for pensions during the past year that the press has on the whole been favorably impressed with the arguments of the teachers. Here and there opposition found some voice; in general the objection in such cases was that if teachers cannot save for old age out of their present salaries, it would be preferable to raise the salaries rather than to legislate special benefits for a favored class. The success of all but two of the agitations for teachers, pensions, however, indicates that the opposition was not taken very seriously.

Since the last report of the Foundation, twelve states—Connecticut, Illinois, Indiana, Iowa, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, Pennsylvania, and Washington—have considered the establishment of state pension systems for public school teachers. In eight of these the systems have been established; in four—Connecticut, Iowa, Pennsylvania, and Washington—the proposed measures failed of enactment; in the last state the bill, tho passed by the legislature, was defeated on a referendum to the public. The systems proposed in Iowa and Washington were discussed in the Ninth Annual Report of the Foundation. The Connecticut bill contemplated a non-contributory system to be maintained by the state. After thirty years of service, of which the last fifteen were to be in the state, teachers were to receive pensions of sums equal to forty per cent of their average salary during the last five years of service, with an additional two per cent for each year of service in excess of thirty; a minimum pension of \$200 a year and a maximum of \$500 were proposed. In the case of disability after twenty-five years of service, pensions in proportionate amounts were to be paid. It was estimated that the demands on the state during the first few years of the operation of the system would have been \$20,000 a year. The bill was rejected on the plea of economy, and Connecticut now remains the only New England state without a state-wide pension system for her teachers, a fact which may expose her to some disadvantages in securing and retaining teachers in competition with her neighbors.

The bill brought forward in the Pennsylvania legislature with the approval of the

State Educational Association went to the other extreme in proposing a system based entirely on teachers' contributions. This was due, no doubt, to the constitutional provision against the use of public funds for pension purposes. From the wording of the bill it would seem that the system, if passed, was to be experimental during the twenty years subsequent to its enactment, since provision was only made for contributions between 1915 and 1935. The bill contained some novel features, not the least striking of which was that the contributions were to diminish with increasing service. Thus for the first five of the twenty years teachers were to contribute four per cent of their salaries, three per cent during the next five years, two per cent during the following five years, and one per cent in the final period. It is difficult to discover any rational basis for a scheme that imposes a disproportionate burden on the small salaried teacher at the outset of her career. That it was not intended to penalize those teachers who would not remain in the profession is indicated in the provision for the refund of the amount contributed to teachers resigning from the service. Another feature of the bill was that length of service was to be computed on the basis of eight months to the year, a provision that might conceivably work out to the advantage of the teachers in the large city school systems. The plan was to be administered by a State Board of Retirement of five members appointed by the State Superintendent of Public Instruction for overlapping terms: the Board was to include one class-room teacher, one county or district superintendent, and two members not teachers, no qualifications being prescribed for the fifth member; two of the five members were to be women. It will be noticed how inadequate is the representation of the more than 40,000 class-room teachers of the state, and how the power is ultimately vested in the state superintendent. Teachers who reached the age of sixty and had served thirty years of eight school months each, twenty years of which, including the last three, were in the public schools, were to be entitled to retire, and teachers who reached seventy years of age were to be retired by the State Board of Retirement. The amount of the pensions was to be calculated on the basis of one-sixth of the average monthly salaries for each year of service with a minimum of eighty per cent of the legal minimum salary of a teacher in the state for the legal minimum school year, and with a maximum of \$800. The bill included provisions for disability allowances under certain contingencies, such as length of service in the state, total length of service in the United States and the state, and age. The bill encountered much opposition; the teachers in the small systems objected to the burden of the contributions, which was not offset by contributions from the state; the teachers in the larger systems were opposed to a scheme that would deprive them of the benefits of existing arrangements in which the contributions were not so high, the employing authority supported the fund, and some assets had already been accumulated. The chief weakness of the measure was the inadequate financing, since no teacher would have been required to contribute more than \$592 on a basis of eight contributions per year,—a deficiency which no amount of complicated regulations could set right. The measure

might perhaps have been assured of earlier success if its advocates had come forward with a definite and straightforward request for state aid instead of urging a scheme which could have been saved from early insolvency only by a subsequent appeal to the state. Too much is at stake, when upwards of 40,000 teachers are involved, to indulge in experiments, even if they are intended merely as entering wedges for proving the need of state support.

Of the remaining eight systems only one—that of New Hampshire—is based on the non-contributory principle, a fact which may offer some guarantee that sounder principles will in course of time prevail in the whole matter of pensions. The remaining systems follow the same pattern. Despite the increased attention given to the subject, notwithstanding the numerous criticisms of prevailing practice on theoretical grounds, and regardless of the many instances of practical failure in recent years, pension legislation pursues its wonted course. Seldom is there any evidence of expert assistance. Too many of the plans adopted—and this statement applies not merely to teachers' pensions—appear to be inspired by a desire to launch a system somehow, relying on a secret and indefinable hope that Providence or the public treasury or the wealthy philanthropist will not permit the poor pensioner to suffer. This feeling was well expressed by the retired teachers of New York City, in a recent meeting to protest against the proposed reduction in their allowance, in the sentence: "I don't believe we will have any difficulty in getting our money, for the City of New York is too great to allow its retired teachers to suffer." It is questionable on the whole, the teachers' contributions being as a rule so slight, whether in the long run a straight non-contributory system would not be more honest to the tax-payers. Many of the recent schemes approximate too nearly to a kind of reversed tontine policy—those who come in early get what there is; the ultimate survivors stand to lose everything, the pension and their own contributions. It seems to be difficult for the pension legislator to divorce himself from the notion that the contributions of the young teachers should be applied to the payment of the allowances of those who retire. Probably if the rank and file of teachers realized that their contributions were pooled in a sweepstake in which their chances of participation are more than likely to diminish with age, there would be stronger and sounder reasons for hesitating to become members of a fund than the prospect of an early withdrawal from the profession. It has been impossible to discover in any of the campaign literature on behalf of pension legislation any estimate of the probable cost of a pension system. Whether this has been furnished in the respective legislatures when the subject was under discussion, it is impossible to say. A brief summary of the legislation of the past year will serve to bring out some of the criticisms to which the new systems may be exposed. In every instance, it should be noted that part of the fund is made up of odds and ends that come under the headings of gifts, legacies, bequests, devises, and income from investments.

The Illinois pension law applies to teachers throughout the state with the exception of cities and districts with a population of over 65,000; this in practice excludes

only Chicago. The system is to be administered by a small board of trustees of five members, composed of the superintendent of public instruction and the state treasurer, *ex officio*, and three members elected by the contributing teachers and beneficiaries. The fund is to be made up of assessments on teachers' salaries, and a share of the common school fund of the state sufficient to meet the demands on the fund, but only up to one-tenth of one mill on each dollar of the assessed valuation of all the taxable property of the state. Membership in the fund is compulsory on all new teachers, but teachers at present in the service are given until September 1, 1920, to signify their intention of participating. The members are required to contribute according to the following scale: \$5 a year for the first year of service; \$10 a year during the next five years; and \$30 a year during the succeeding ten years. To become eligible to a pension teachers must have contributed a total of \$400 to the fund, must have taught in public schools for twenty-five years of which fifteen must have been in the schools of Illinois, and must be fifty years of age. On retirement they are to receive \$16 a year for each year of service, with a maximum of \$400 a year. Disability allowances may, in the case of incapacity certified by two competent physicians, be obtained after fifteen years of service. Teachers withdrawing from service before completing fifteen years of service are to be entitled to a return of fifty per cent of their contributions without interest.

The pension law of Indiana introduces a new and interesting principle. While the scheme provides for a state administered pension system, the state is to be divided into units, in each of which the teachers and administrative officers may by majority vote decide to become members of the fund. Each city with a population of 5000 or more, each county, and each public state normal school forms a unit. The scheme has the merit of encouraging the more progressive parts of the state to join the system and by their action to set an example to the rest. By leaving the decision to majority vote, however, there is the danger that the younger teachers may outvote those who are older, have become firmly established in the profession, and are anxious to secure the protection of a pension. There does not seem to be a provision in the act to make the vote of the majority binding on all the teachers of a unit. Until all the units have joined the fund, local option may have the effect of discouraging the mobility of teachers. The plan has also the further disadvantage that, owing to uncertainty of membership, the ultimate needs of the fund cannot be definitely estimated. The scheme, however, is suggestive, and as compared with earlier permissive systems has the advantage of being administered by the state. The administration of the system is to be entrusted to a board of five members, made up of the superintendent of public instruction, the state auditor, the attorney-general, and two persons appointed by the governor. The representation of teachers on the board appears to be inadequate. The fund is to consist of teachers' contributions and of apportionments from the state tuition tax sufficient in each unit to meet the demands for annuities, benefits, and other expenses. It may be noted that the source of state apportionment, since

the tuition tax is to remain as it is, is an encroachment on the needs of the schools, from which the units with the oldest teachers will be the first to suffer. The contributions from teachers are on a graduated scale: \$10 a year for the first fifteen years; \$20 a year for the next ten years; \$25 a year for the following ten years; and \$20 a year thereafter up to the fortieth year of service. Teachers may retire after thirty-five years' service provided their total contributions amount to \$600, or after forty years' service the total contributions being \$700. Twenty-three years of the service must be in the schools of the state. The retiring allowance is graduated from \$600 to \$700, according to the years of service from thirty-five to forty. Disability allowances, varying from \$350 to \$575 a year, may be paid in the case of teachers incapacitated after twenty-five years and up to the thirty-fifth year of service. All the contributions are to be returned without interest to teachers withdrawing from the profession before becoming eligible for a retiring allowance. The law, which the governor refused to sign, does not become effective until January 1, 1917.

The Michigan retirement law passed thru numerous vicissitudes in its course thru the legislature. As originally framed, it was proposed that the state should make appropriations out of the general fund in the treasury to meet any deficiencies that might arise, and that \$6000 a year be paid to meet the expenses of administration. Both clauses were struck out, with the result that the system will be supported solely by teachers' contributions, graduated on the following scale, which the retirement fund board has power to increase: One-half of one per cent a year of salary for the first five years with a maximum of \$5 a year; one per cent of salary up to \$10 a year for the next ten years; and two per cent of salary up to \$20 a year for the succeeding fifteen years. The maximum total contribution required from each teacher is fixed at \$425. Thirty years of service, of which fifteen must be in the schools of the state, are required for eligibility to a pension of one-half of the average annual salary during the five years preceding retirement. A minimum retiring allowance of \$300 and a maximum of \$500 a year are established. Proportionate amounts are to be paid in the case of retirement after twenty-five years of service or in the event of disability. An age requirement of fifty-five years was struck out of the original draft of the bill. The retirement fund board consists of six members—the superintendent of public schools and five members, of whom one must be a woman teacher, appointed by the governor. Teachers at present in service are given one year in which to decide whether they will become members of the fund; new teachers become members on accepting their appointment. Detroit, which has its own system for pensioning teachers, is exempt from the law and will continue to administer its own fund. Teachers who withdraw from the service may receive a return of half the amount that they have contributed, without interest. It may be mentioned that the state attorney-general has declared the law—which was drafted by an ex-judge of the Supreme Court of the state—unconstitutional.

Under the law adopted in Minnesota the board of trustees is to consist of the super-

intendent of public instruction, the state auditor, and three persons elected by the members of the retirement fund association. Teachers already in service are allowed until September 1, 1917, to join the fund; membership is compulsory on new members. The fund is to consist of an annual state appropriation of one-tenth of one mill on all the taxable property in the state, and of assessments on teachers' salaries. Teachers will be required to make a total contribution to the fund before retirement of \$400 in twenty-five annual payments, as follows: \$5 a year in the first five years; \$10 a year in the next five years; \$20 a year for the succeeding ten years; and \$25 a year for five years thereafter. Teachers may retire for any cause after twenty years of service, ten of which must be in the schools of the state. The amount of the pension varies from \$350 a year up to a maximum of \$500 a year after twenty-five years of service. Proportionate disability allowances are to be paid after fifteen years of service, ten of which must be in the schools of the state. In the event of resignation or death one-half of the amount of the contributions is to be returned without interest.

The Montana law requires contributions from teachers of \$12 a year for twenty-five years, a total of \$300. This is to be supplemented from time to time by state appropriations of such sums as are necessary to carry out the purposes of the fund. On retirement after twenty-five years of service, fifteen of which must be in the state, a pension of \$600 a year is to be paid, and a proportionate allowance will be granted in the case of bodily or mental infirmity after fifteen years of service in the state. The law is binding on new teachers by virtue of their appointment; teachers at present in service are required to decide before January 1, 1916. The retirement board consists of three members, the superintendent of public instruction, the state treasurer, and the attorney-general.

In the development of recent pension systems the Nebraska law alone requires the membership on the board of trustees of persons with some technical knowledge. The board of five members is to consist of the state insurance commissioner, the secretary of the state banking board, the superintendent of public instruction, and two persons appointed by the governor. The fund is to be made up of contributions of from one to one and one-half per cent of the teachers' salaries each year, and a state appropriation of a sum of not less than twice the amount of the teachers' contributions, nor less than the amount necessary to meet the demands of the fund. Teachers may retire on a pension of \$500 a year either if they are sixty years of age and have served twenty-five years, five of which must be in the schools of the state, or if they are fifty-five years of age and have served fifteen years in the schools of the state out of a total service of twenty-five years. Proportionate disability allowances are to be granted to teachers disqualified for further service by ill-health. In the case of resignation or death all contributions are to be returned with interest at two per cent.

Under the act for the retirement of teachers passed during this year in the state of Nevada, the state board of education, as the public school teachers' retirement salary fund board, is given charge of a fund to be made up in the usual way of dona-

tions, legacies, gifts, teachers' contributions, and an ad valorem tax of three mills on the hundred dollars of all taxable property in the state. The teachers will be required to make thirty contributions of nine dollars a year, and will be eligible to retire on a pension of \$500 after thirty years of service, of which at least fifteen, including the last ten, must be in the public schools of the state. In the case of bodily or mental infirmity incapacitating them for service, teachers who have taught for fifteen years in the public schools of the state will be entitled to an allowance which shall bear the same ratio to the full pension as their years of service to thirty years. No provision is made for refunding contributions to teachers who withdraw from service. It will be noticed that the teachers will be eligible to retirement salaries of \$500 a year in return for total contributions of \$270 spread over thirty years.

New Hampshire has established a pension system on a non-contributory basis, to be administered by the superintendent of public instruction. A retiring allowance of sixty per cent of the annual salary during the five years preceding retirement is to be granted to women who have reached the age of fifty-five and have served thirty years, fifteen of which have been in the public schools of the state, and to men who have reached the age of sixty and have served for thirty-five years, with a similar requirement of fifteen years in the public schools of the state. Proportionate allowances are to be granted after fifteen years of service or in the case of disability. In addition to the qualifications mentioned, teachers to be eligible to retiring allowances must, after September, 1915, hold a state teachers' certificate or a service certificate issued by the state superintendent. The demands of the fund are to be met by annual appropriations.

It is evident, then, that those concerned in framing the above laws, with the exception of that in New Hampshire, have adopted a more or less unvarying formula. "The principle of requiring contributions from teachers has been accepted generally, but with the exception that in nearly every case teachers must have made total contributions of a sum equal to the amount of the first year's allowance, these contributions bear no relation to the allowance. There is no intention in the minds of the legislators that the teachers shall pay for their annuities. The anomalies to which such a plan leads have been aptly illustrated by one of the critics of the Michigan law, who points out that "an average person at the age of twenty, in order to have an annuity at fifty of \$500 (the maximum retiring allowance provided) for the balance of life, would have to pay an annual premium of \$107.69 for thirty years." The teacher would, under the bill, pay in a maximum of \$425, leaving a shortage of \$2805.70. From another point of view, since the expectancy of life at fifty, according to the American Experience Table of Mortality, is 20.91 years, a teacher might at the above rate be entitled to draw \$10,455 from the fund, or \$10,030 more than the total amount of his contributions. It is at least open to doubt whether any state with a knowledge of such facts would be prepared to make appropriations to meet the necessary demands on a fund over and above the teachers' contributions.

Nor do the pensions bear any relation to salaries. The rural school teacher and the city superintendent are to be retired on the same maximum pension, even where the contributions have been on the basis of a percentage of the salary. Nor have the amounts of the allowance any reference at all to the average salaries obtaining in the state. Indeed, in some systems it will not be impossible for a majority of the teachers to retire on pensions greater than the salaries that they have been receiving, as is indicated in the following table:

<i>Total Teachers' Contributions</i>	<i>Pension</i>	<i>Average Salary (1912-13)</i>
Illinois \$400	\$400	\$662.07
Indiana 600-700	600-700	547.00
Michigan 425 (max.)	300-500	519.52
Minnesota 400	350-500	459.57
Montana 300	600	656.82
Nebraska 500	500	520.29
Nevada 270	500	634.86

Not only are the ordinary principles of mathematics being neglected, but there is at least room for doubt whether the interests of the public service have been consulted. For a long while, of course, much has been heard of the hazards of the teaching profession, but that they are so hazardous as to warrant the retirement of its members before the age of fifty, it would be difficult to establish. The time when the establishment of a pension system is being considered offers an excellent opportunity for collecting facts on which to base some definite conclusions as to the risks involved in the profession. That so little has been done in this field that educational leaders are still content to make what may at least be characterized as unfounded and conjectural assertions is but another indication that the whole subject of pensions is still far from receiving the scientific consideration that it demands. Three of the laws under discussion permit teachers to retire after twenty-five years of service, one after twenty years, one after thirty years, and one after thirty-five. Only two of these—Indiana and Minnesota—encourage teachers by means of increased allowances to continue in service for a period of five years beyond the minimum period for eligibility. Assuming that the great majority of teachers enter service between the ages of twenty and twenty-five, and taking into consideration also the disproportionate relation between the pension and the average salary, it would be possible for a teacher in Minnesota to retire on a pension at the age of forty and enjoy it, according to the tables of mortality, for 28.18 years, and even if he retired after twenty-five years on a greater allowance, he might still be well under fifty years of age; in Montana and Nebraska teachers will find it possible to retire between the ages of forty-five and fifty; Illinois will not retire teachers under fifty; in Michigan the requirement of thirty years of service would make the average teacher eligible to the provisions of the law between the ages of fifty and fifty-five. Indiana alone, while not providing an age limit for retirement, does not require an undue length of service when she makes it possible for teachers to retire after thirty-five or forty years of service.

Clearly, the whole question of pensions needs to be threshed out more fully than it has been hitherto. Now that the retirement of public servants is almost universally regarded as desirable in the interests both of the employer and the employee, there is urgent need for a proper consideration of the finances underlying the whole subject. The trial and error method of present day legislation must inevitably lead to consequences not unlike those that attended the early history of friendly societies, and incalculable injustice will be done to many at an age when they are preparing to retire from the labors of a lifetime and to enjoy benefits to which they feel that they have contributed in good faith, and when they are least fitted to meet the burdens that the probable insolvency of existing systems will impose on them. With the main facts of actuarial theory so definitely established, it hardly seems necessary to experiment with systems which must inevitably be reformed and placed on sound foundations within a very short time. Something more than sentiment, something more business-like than the evil traditions that surround army and navy pensions, is required before genuine progress can be made. And in this connection it is interesting to record that after tinkering unsuccessfully with pension schemes, similar in character to those here discussed, the teachers of Iowa are at last turning for salvation to the model set by the Massachusetts Teachers' Retirement Law; if, as they hope, they can supersede this model, so much the greater will be the gain to teachers throughout the country. But it is significant that the light is beginning to dawn.

ONTARIO

An interesting attempt to consolidate the pension funds of the province is embodied in the pension bill introduced before the Ontario Legislature during its last session (1915). The bill aimed to establish a provincial scheme without any exemptions, and in comprehensiveness it went beyond the Massachusetts scheme by providing for the coöperation of local educational authorities with the teachers and the provincial treasury. In the bill as presented to the legislature a pension system was planned on the basis of contributions from the province, the teachers, and the authorities employing them. Teachers were to contribute two per cent of their salaries, with a minimum annual contribution of \$11; the treasurer of Ontario was to set aside to the credit of the pension fund a sum equal to the total contributions of the teachers; while local authorities, such as school boards and county corporations, employing teachers, were to contribute a sum equal to one per cent of the salary paid to teachers in their employ. In other words, the basis of the pension fund was to be an annual sum equal to five per cent of the total salaries paid to teachers. Teachers were to receive a pension of one-sixtieth of their average salaries during the last ten years of service for each full year of service, and were to become eligible for retirement after forty years of service without any requirement as to age. The minimum amount of a retiring allowance was fixed at \$365 a year, and the maximum at \$1000. In the

case of disability after fifteen years of service, verified by an official medical referee, an allowance calculated as above might be granted subject to a reëxamination of the beneficiary upon the order of the Minister of Education. Refunds of contributions in the case of death or withdrawal from service were not to be made until after the expiration of ten years from the passing of the bill; thereafter the amount of the refunds was to depend upon "the result of actuarial examination of the fund and of the claims and prospective claims upon it."

The fund was to be entrusted to the financial control of the treasurer of Ontario, who was required to make it chargeable to the Consolidated Revenue Fund, with interest at four per cent per annum. The general management of the system was to be placed in the hands of a committee on claims of seven members, including three teachers and one inspector, appointed by the Minister of Education. The committee, which thus contained a very fair representation of the teachers, was to approve the claims for pensions.

It will be noticed that with the exception of two points—the introduction of the local authorities and the retention of the contributions in all cases for ten years—the system here planned does not differ in principle from those referred to in the previous section. While there is some merit in requiring the local authorities to participate in the contributions to the fund, it is questionable whether such a course is not open to some objections; for unless some definite source of these contributions is specified in the act, the additional burden may tend to fall on the teachers in the shape of reduced salaries, or the welfare of the schools may be affected by a diminution of the amount of money at their disposal. In the case of the smaller and poorer districts, it seems highly probable that in the long run the responsibility for their contributions will have to be assumed by the Provincial Government. The second point—the safeguarding of the fund intact during the first ten years of its existence by prohibiting refunds during that period—seems somewhat difficult to reconcile with justice to the individual contributor. Such a measure could not be adopted if a public pension system were looked upon, as it should be, as a method of aiding the individual to save for old age instead of as a mutual benefit plan. The requirement of the same percentage of salary as contribution to the fund, irrespective of its amount, and the establishment of a minimum assessable salary of \$550 a year, even for teachers receiving considerably less, must impose a hardship on the teachers in receipt of low salaries. The same class of teachers is exposed to the further disadvantage that while they are required to contribute the same proportion of salary as their better paid colleagues, the prospective pension is calculated on the basis of salary and not of the contributions. Whether a fund based on total contributions of a sum equal to five per cent of the salary roll will be adequate to meet the future demands upon it, is a matter for the actuaries to decide, and provision appears to have been made for periodical actuarial examinations. On the face of it, however, the contributions do not appear to bear any relation to the prospective pensions. The provisions for meeting the accrued liabilities seem not only inadequate, but calculated to defeat one of the

chief objects of a pension system — to retire teachers who by reason of age and length of service are incapacitated for work. The bill provides that only those years during which contributions have been made shall count as full years of service; years completed prior to such contributions shall count as half-years only. The consequence of such a provision may well turn out to be that when the bill becomes effective there may be a number of teachers who have already served for forty years, each of which will count only as half a year, thus requiring twenty more years of service and contributions. It is a serious omission that the older teachers are not taken care of at once by the state, unless, of course, they are already provided for under existing schemes.

The system presented in this bill, on the whole, bears a close resemblance to those systems in the United States which provide pensions so long as the money in the pool lasts, instead of assuring to the contributor some definite sum purchased with his own contributions and encouraging saving by the promise of additional aid from the public treasury.

NEW YORK CITY PENSIONS

The insolvency of the New York Public School Teachers' Retirement Fund has now been definitely declared. In August of 1915 Comptroller Prendergast was compelled to issue a circular letter to retired teachers warning them that after full payments of allowances in August a diminished payment, probably about one-third of the normal amount, would be made in September. This situation was fully anticipated early in 1914, but great difficulty has been encountered in framing a temporary measure that would satisfy all concerned. The causes of the insolvency are obvious. The system was never on a satisfactory financial basis. The chief defect has centred round the item known as "absence deductions." Part of the resources of the fund was derived from fines levied on teachers for absence, but these fines could be refunded if good cause for the absence were alleged. From time to time the fund has been temporarily inflated by these deductions, a large part of which as a rule was refunded, altho retirements were usually made on the inflated basis. The refunding of absence deductions has not been administered with any strictness, and the recommendations for refunds were not under the same management as the pension fund. From 1895 to 1915 the total deductions have amounted to \$6,360,244.44, of which \$2,616,341.28 was refunded. Added to these abuses was the neglect of the requirement "that the number of persons retired in any one year shall be so limited that the entire amount of the annuities to be paid for that year shall not be in excess of the estimated amount of the retirement fund applicable to the payment of annuities for that year." Thus, in spite of the difficulties in which the fund was already beginning to be involved, the number of teachers retired on pensions increased from 89 in 1911 to 222 in 1912. In fact, the existence of the fund has only been temporarily protracted during the last few years, since 1910, by advance borrowing from the city's excise moneys and the postponement of the refunding of absence deductions.

A number of bills were introduced in the legislature during the year at the instance of teachers' organizations to provide new plans or to extend the life of the present system, but none succeeded in passing. The bills represent considerable variety of opinion. In general it would not be unfair to say that the teachers are opposed to higher assessments, and that many would welcome a straight pension system maintained entirely out of the city funds, or else a contributory system, in which the assessments remain as they are, supported by larger grants from the city treasury. In one bill an additional tax of one-tenth of a mill on each dollar of assessed valuation of real and personal property was proposed. Another suggestion involved the elimination of the deductions for absences and the five per cent of excise moneys, the substitution of a graduated scale of assessments, the use of the permanent fund, and the provision of adequate funds by the Board of Estimate and Apportionment to meet all demands. Still another scheme advocated assessments on teachers' salaries of a flat amount, with an option to existing teachers to pay this or a percentage contribution, and placed the remainder of the burden, including a sinking fund and the making up of deficiencies, on the city. The Board of Estimate and Apportionment, acting on the advice of the Pension Commission, recommended a temporary measure to take care of the pensioning of teachers for the next two or three years, when it is hoped that a new system based on scientific principles will be introduced. It was proposed in this measure to increase the annual contributions of teachers to three per cent of their salaries; this sum together with the city's contributions would have been adequate to meet the pension claims and to refund the absence deductions until 1917. An alternative plan, requiring only two and a half per cent assessments, was also presented, but it was shown that all the claims on the pension fund could not be met on this basis. This measure also failed to pass, altho it had the merit of being temporary only. The other bills not only placed the burden on the city, but were framed in ignorance of the fact that the accrued liabilities alone were more than \$110,000,000. With the failure of these measures nothing remained to be done but to warn pensioners to make such arrangements as they thought best in view of the certain reduction of the amount of the pensions. The Pension Commission has made the following suggestions pending the institution of a new plan: A reduction in the existing pensions to about forty-two per cent for the remaining five months of the year; the restoration to active service of the least exacting nature of teachers who have been retired since 1912 and who are still able to render service; voluntary contributions by teachers of two per cent of salaries during the remainder of the year; and the withholding of refunds for excused absences during 1915. It seems very probable that these suggestions, with the exception of the recommendation of voluntary contributions by teachers, must be accepted or an impasse will be reached. A final solution can be hoped for only when the report of the Pension Commission gives the whole matter of pensions a new start on a scientific basis, actuarially sound and making an equitable distribution of the burden.

The Pension Commission, whose appointment was discussed in the last report and upon which has fallen the responsibility of saving the pension situation in New York, continues its work of investigation and research. The tremendous but necessary undertaking of establishing the primary facts concerning the employees of the city in the different branches of its services has been completed. Some 130,000 questionnaire cards were distributed to secure the vital statistics, and remarkable success attended the collection of these data. The aim of these questionnaires was to secure the information from which to develop rates of mortality, withdrawal from service, disability, and death, and to discover the methods of operation of existing pension funds as a basis for further constructive work. Elaborate systems of checking up the returns were devised, and were necessitated in part by incorrect or inconsistent returns, in part by the unsatisfactory condition of the official service records. This work is being supplemented by a study of pension systems at home and abroad and of pension literature in general. Since two states, Illinois and New Jersey, have by legislative enactment decided to conduct investigations into their pension funds, it may be of general interest to indicate the nature of the details which it is desirable to possess for the purposes of establishing a pension system, and which the Pension Commission endeavored during the past year to secure as a basis for actuarial studies. Other topics were expected to appear during the course of the investigation, but the following may be regarded as essential:

- I. The average age of entrance into the service.
- II. The average years of service of all employees in service.
- III. The average years of service of employees who retire from service.
- IV. Cost of pension of flat amount for average employee.
- V. Cost of pension based on salary for average employee.
- VI. Cost as a percentage of average employee's salary.
- VII. Amount of total salary received by average employees.
- VIII. Standardized or crude death rate from service accidents.
- IX. Comparison of actual mortality with that expected under population or similar table, considering active service and pensioners separately.

The forthcoming year should see the work of the Commission completed, including the interpretation of the facts and the construction of a new pension system which will have the merits of being adjusted to the actual and proved needs of the situation, of being established on sound actuarial principles instead of a priori guesswork, and finally, it may be hoped, of doing justice to the employee, the municipal treasury, and the tax-payer. The success of its suggestions and recommendations must ultimately depend on a clear statement to the public that has so long looked upon a pension as charity, and to the employees who have been brought up to regard it as a right inherent in the service and claimable at any age, whether they are or are not fit to continue to give of their best to their employer—the public.

NEW JERSEY TEACHERS' RETIREMENT FUND

In the annual report of the Teachers' Retirement Fund of the State of New Jersey, the secretary takes occasion to support arguments on the soundness of the Fund by the statement that the report of the Foundation for 1914 "makes no statement derogatory to the New Jersey Fund." The use of the Foundation's name in this connection was wholly unwarranted, since the account of the New Jersey system was purely descriptive and in no sense critical. The New Jersey report is interesting because it is typical of the usual attitude in the matter of pensions—an entire failure to look to the future. Present figures and facts may prove satisfactorily that all is well with the New Jersey Fund. At the same time the teachers of the state number close on 14,000, the present disbursements merely for the small percentage of present pensioners already amount to \$206,946.92, a sum almost equal to the annual receipts, and the assets were adequate to pay the pensions for two years only. The abstract of the state treasurer's report displays in large capitals that the liabilities of the fund are "none." As a matter of fact—and it is just an obvious fact of this kind that proves dangerous to pension funds—the fund has liabilities for every cent of its \$432,183.55 assets to those who will retire next year and in all future years until every member of the present active force is retired. At no point in the argument is any evidence adduced to prove that the fund can do what a sound pension fund should do, that is, furnish some assurance that it will be in a position to meet its liabilities twenty or thirty years hence, when all the teachers now in active service will be eligible to retirement. A pension fund is not good because the present assessments are low, or because there are no refunds, or because the pension now promised is high,—all features claimed as points of superiority over the New York City and Massachusetts plans. The argument does not refer to the fact that the present active teaching force in New Jersey is paying contributions not to protect themselves but to pay the pensions of those already retired, nor that the fund lives from year to year, nor that there is any injustice in refusing to refund contributions to teachers who resign from the service. The benefits of the Massachusetts plan may be small, but they are at least actuarially secured. It must be obvious to the secretary of the fund that the assessments required by the fund cannot by the most brilliant financiering yield the annuities offered. The contributors have a right to ask how the deficiency is made up.

With reference to the state half-pay pensions, it is mere quibbling to assert that this and the Teachers' Retirement Fund are one. In so far as the annuities consist of more than the sum accruing from the teachers' contributions, the retirement fund is to that extent a pension fund. The anomaly resulting from the coexistence of the two schemes is shown by the fact that teachers may conceivably retire on incomes from the two sources greater than their final salary. The supporters of the present system must recognize that the essence of an annuity scheme is that every cent of it should be contributed by or for the teacher concerned and not be paid as it now is out of the con-

tributions of his colleagues. The erosion may at first be small and hardly noticeable, but if it be continued for a number of years, the fate of the New York City system may well await the New Jersey Teachers' Retirement Fund.

PENSIONS FOR UNIVERSITY PROFESSORS

UNIVERSITY OF NEVADA

THE Board of Regents of the University of Nevada has been empowered by an act passed during the present year to place upon the pay-roll of the university any employee of the university who after fifteen years of service has become unfit for further duty owing to physical or mental disability. The holder of such an emeritus position will receive a salary of not more than one-half of his average salary during the last five years of service. A similar benefit is to be extended to the widow of an employee who has been left with insufficient support. The expenditure to be incurred by this plan is to be included in the estimates presented by the regents for the maintenance of the university.

OHIO WESLEYAN UNIVERSITY

Ohio Wesleyan University must be added to the brief list of denominational institutions that have established their own systems of retiring allowances and pensions. The present scheme was adopted by the trustees of the university in 1912, and became effective at the commencement of 1913. The system is on a non-contributory basis; while the sources of the funds are not mentioned, the expenditure for allowances will presumably be charged to general maintenance. The benefits are extended to instructors of all ranks and officers of administration who may be regarded as of equivalent rank. Allowances will be granted to officers who have reached the age of sixty-five and have been in the service of the university for fifteen years; the trustees may at their option, however, vote an allowance in cases where the duration of service has been less than fifteen but more than ten years, and may also at their discretion take into consideration years of service, not exceeding ten, in another institution in the case of persons appointed at an advanced age. The amount of the allowance is fifteen-sixtieths of the average annual salary during the last five years of service, with an additional sixtieth for each additional year of service up to thirty. The widow of a person in receipt of or eligible to an allowance will be entitled to one-half of the retiring allowance to which the husband was entitled, provided she has been his wife for not less than ten years. The granting of a pension to a widow under sixty years of age is optional with the trustees. In case of retirement of an officer before the full retiring age, owing to physical disability, the trustees may at their option, and if the length of service preceding such retirement has been twenty-five years, shall, make an allowance not to exceed the amount of the allowance which would have

been granted on retirement at sixty-five. The trustees may also grant an allowance to the widow of an officer who dies before reaching the retirement age, and such an allowance shall be granted if the officer had served twenty-five years before his death. The trustees state that the establishment of the system does not create a legal obligation, and they reserve to themselves the right to annul or revise the above provisions whenever the financial condition of the university requires it. The Ohio Wesleyan University is to be congratulated on recognizing the need of a pension fund, and for its independent action in the matter. If any criticism may be offered, it is on the ground that the university has probably undertaken a heavier burden than it realizes, altho this is offset by the large discretionary powers vested in the trustees. A contributory system, actuarially secured, with regulations that work automatically, without the risk of dissatisfaction under a system operated in large part at the option of the trustees, would have been sounder and, in the long run, more satisfactory to the beneficiaries, actual and prospective. Perhaps the trustees, after a little experience with the present system, may be led to exercise their power of revising the provisions. At the same time the university, by adopting the pension principle as an essential feature of the professional service, is setting an example to many institutions that the Carnegie Foundation is precluded by the nature of its charter from adding to its list.

UNIVERSITY OF SASKATCHEWAN

The University of Saskatchewan has established a pension system for the members of its staff. The system, which came into effect on July 1, 1915, is generous in scope and includes the dependents of members of the staff in its provisions. While the officials are required to contribute definite percentages of their salaries each year, the university by implication appears to guarantee the solvency of the fund. Each member will be required to contribute annually a percentage of his salary which varies with the age at which the first contribution is due; thus the contribution for officials under twenty-five years of age is five per cent of salary per annum, and this percentage increases by one-half of one per cent for each additional five years up to the age of forty, when the contribution is at the rate of seven per cent of salary per annum; teachers who are over forty-five years of age will contribute at the rate of eight per cent per annum. The annual pension will be a sum equal to two and one-half per cent of the total salary received during the last thirty-five years of service, or, if the service has been less than this period, then from the time of appointment. Contributors become eligible for pensions at the age of sixty-five, or at the age of sixty after thirty-five years of service. Similar allowances are made to contributors who become incapacitated for further service and produce the certificate of two physicians, provision being made for the furnishing of evidence of incapacity from time to time at the request of the governors of the university. Where a contributor volun-

tarily withdraws from the service of the university, he is entitled to a refund of the whole amount of his contributions without interest. The benefits are extended to the dependents of a deceased contributor, and include the widow, children up to twenty years of age, widowed mother, and aged father solely dependent on the deceased. The allowances in these cases are to be equal to one-half of the retiring allowance of the deceased contributor or of the allowance that he would have received had he been retired at the time of his death.

Since the university is making the retiring allowances chargeable to its revenues, the actuarial problems hardly enter. But it is open to question whether the plan has been adopted with a complete realization of the financial burden involved. The plan undoubtedly is generous in its provisions, but there is every danger that it may be wrecked by its comprehensiveness. No restriction as to length of service or number of contributions is prescribed for contributors who retire at the age of sixty-five or on the grounds of disability, nor is there any mention of similar conditions for eligibility to the allowances provided for dependents. The latter burden appears to be unduly increased by the continuance of allowances to children up to twenty years of age and to the mother and father of deceased contributors. In the Seventh Annual Report of the Foundation, in discussing a feasible pension system for a college, it was estimated that a college with an instructing staff of twenty-five and an annual salary roll of \$60,000 would require an endowment of from \$150,000 to \$250,000, invested at four per cent, to inaugurate a pension system comparable with that of the Foundation, whose provisions, it must be mentioned, go no further than the widows of deceased instructors. Stated another way, a pension system similar to that of the Foundation would require an expenditure of somewhere between six and ten per cent of the active salary list. Without the restrictions mentioned above and with the additional benefits offered beyond those granted by the Foundation, the plan of the University of Saskatchewan may perhaps involve an expenditure by the university of at least four or five per cent of the salary list in addition to the contributions from the staff. Since the plan is being inaugurated with a staff of teachers whose ages probably vary from below twenty-five up to the retiring age, and whose periods of service show a corresponding degree of variation, a further sum must be set aside to meet accrued liabilities. No doubt it is not beyond the means of a wealthy institution to carry the burden of an expensive pension plan, yet there is the risk of endangering what is probably the main purpose of such a scheme, to provide for the period of old age or disability of the members of the staff. It should be the paramount object to assure the payment of these obligations before the fund is charged with the heavy responsibility of providing for dependents. But no criticism based on the hard facts underlying the theory of pensions can detract from the liberality and generosity of those who were responsible for drafting the pension plan of the University of Saskatchewan.

CLERGY PENSION FUNDS

SIGNIFICANT of the progress of the pension movement has been the recent adoption of the idea by a number of religious denominations. During the past year scarcely any synod or conference, or other assembly of church representatives, has lacked a discussion of the subject. Many of the denominations have had long experience with some form of relief measure for ministers and their dependents, but the recognition is spreading rapidly that business and charity cannot be confused, that the practical need and efficiency of the clerical profession demand sound financial principles, and that the haphazard method of philanthropy cannot, in the long run, be relied upon to provide sound measures of relief in old age. While the relief funds are being retained in most cases they are to be supplemented by annuity or pension funds. The plans for establishing these vary, but in general it is expected that the clergy will contribute part of the sum required, and this is to be supplemented either by contributions from the local church organizations, or from endowments. A few examples will serve to indicate the general tendency.

In the Baptist church voluntary local associations for a long time administered relief to the clergy, until 1908, when the Northern Baptist Convention established a Ministers' and Missionaries' Benefit Board to unify existing agencies. An endowment of \$250,000 was raised in 1911, and in 1914 the Convention sanctioned the raising of an additional million dollars. To overcome the objections that some clergy felt to accepting charity, the Benefit Board in 1914 brought forward a "Proposed Plan for the Pensioning of Baptist Ministers," in which was recommended a contributory system based on annual premiums, to be paid by the clergy and graduated according to age, sufficient to purchase an annuity of \$100 at the age of sixty-five. This sum is to be brought up to a maximum of \$500 a year by payments from the endowment fund of the church.

The Congregational churches consolidated their local relief associations in 1886 in the National Board for Ministerial Relief. In 1913 the National Council of the Congregational Churches of the United States recommended the establishment of the Annuity Fund for Congregational Ministers, to pay annuities of \$500 at the age of sixty-five or seventy. To the purchase of this sum the ministers are to contribute one-fifth, and the churches four-fifths.

The demands on the relief fund of the Methodist Episcopal Church have grown so rapidly in the past few years that an attempt is to be made during 1915 to raise an endowment of \$10,000,000 as the One Hundred and Fiftieth Anniversary Jubilee Gift. The relief fund is administered by the Board of Conference Claimants, which has at its disposal contributions from the churches and the income of the Methodist Book Concern. Since 1908 the annual distributions paid by the board have increased from \$600,000 to \$1,100,000. It is estimated that the present need is \$1,600,000 a year, and to this end it is desired to raise the fund mentioned. The intention of the

board does not seem to be to introduce the contributory principle into the fund, but to continue the payment of straight annuities of sums equal to one-half of the average salaries in the respective conferences after thirty-five years of service. In connection with the campaign for raising the fund there has been published *The Retired Minister, His Claim Inherent, Foremost, Supreme*, edited by the Rev. Dr. Joseph B. Hingley, D.D., Corresponding Secretary of the Board of Conference Claimants. This work contains a collection of special pleas and arguments on behalf of ministerial pension funds in verse, song, story, and sermon. While much of this material dwells, as might be expected, on the emotional and sentimental aspects, the book contains useful and interesting chapters on the pension and relief activities of ten denominations, and on some typical examples of pension systems in other fields of work.

The Presbyterian Church at present has also undertaken to raise a permanent endowment of \$10,000,000 for the support of its Board of Ministerial Relief and Sustentation Fund. This Board was established in 1912 by combining the Board of Ministerial Relief, founded in 1876, and the Ministerial Sustentation Fund, founded in 1909. The Sustentation Fund was set up to administer a pension system under which annual pensions of a maximum of \$500 are to be paid to ministers at the age of seventy after thirty years of service, and also to disburse other benefits. The system is contributory, the ministers being required to contribute sufficient to pay for one-fifth of these pensions. In 1915 the Board provided for 2200 ministers and their dependents.

The Protestant Episcopal Church has been engaged during the past year in securing the support of the dioceses throughout the country for the proposed Church Pension Fund, to which reference has been made in a previous report. Objections have been heard, but they have been of little weight. There are still some who would prefer a system based on charitable relief rather than on business principles; others again object to the discrimination involved in making the pension proportionate to salary and ask for a flat rate; there are some, too, who fear that the additional burden of the contributions to the pensions may influence adversely the salaries paid by the parishes; and finally, there are those who do not recognize the necessity of raising a preliminary fund to pay off the accrued liabilities. These objections, however, have not proved insurmountable obstacles, and the campaign appears, up to the present, to have met with considerable success.

INDUSTRIAL PENSIONS

THE development of industrial pensions follows a normal course, and interest in this method of securing efficiency of service continues to grow. With few exceptions, the burden of the pension is borne by the employers, who seek by this method to reward "long and faithful service," "fidelity and endeavor to advance the interests of the Company," or even abstention from "demonstrations detrimental to the Company's best interests" and observance of the Company's regulations. Altho the type of pensions here considered are based on the non-contributory principle, their development is of some significance for general pension theory, if only from two points of view. The amount of the pensions granted, if the instances become sufficiently numerous, will serve to establish some normal or standard ratio between pensions and final wages or salary. The second point, allowing for differences in occupational risks, is that a normal age of retirement may become recognized. At present, however, it must be admitted that the age of retirement is fixed somewhat arbitrarily. But there is every prospect that in the course of a number of years there will be a sufficient accumulation of experience in industrial pension development to warrant better and more accurate adjustments. These can be the more readily made in this field because the employers in each case reserve to themselves the right to make such changes in the plans as experience demands.

The United States Steel and Carnegie Pension Fund has during this year availed itself of the advantages offered by this provision to revise its pension system. The fund was established provisionally in 1911, without an opportunity for considering the facts presented in the careers of the two hundred thousand employees of the Steel Corporation. At the end of four years, after an experience with two thousand pensioners, it is felt that the time has come for adopting changes warranted by the ascertained facts. It has been found, for example, that the average age of retirement was 65.56 years, while the regulations permitted retirement at sixty; similarly, the retirements took place on an average after thirty years of service, instead of the twenty-five permitted by the regulations. Corresponding changes have accordingly been adopted, and the age of retirement has been raised from sixty to sixty-five, and the length of service from twenty-five to thirty years. At the same time another change was adopted to encourage continuity of service; continuity of service will not be considered to have been broken in the case of absence within the following limitations: six months in the case of leave of absence or suspension, one year in the event of a lay-off or reduction of force, and two years in the case of illness or injury. No changes have been made in the amount of the pensions. The revised scheme is, on the whole, for the advantage of the employees to the extent that they are permitted to continue at their employment without any diminution of income. At the same time the pension fund benefits from the reduced demands to be made upon it.

According to its second annual report, the Pension Board of the American Museum

of Natural History is beginning to realize that it has embarked on a plan that is more ambitious and generous than the prospective funds warrant. It had originally been the intention of the board to provide pensions for the widows, children, or other dependents of its deceased employees, but owing to lack of endowment it was decided simply to grant gratuities in the case of the death of an employee. After an experience of two years the board reports that "an inspection of the sums paid for gratuities and pensions shows that the contributions received from the subscribers were in very small proportion to the amounts involved," and recommends, if possible, the establishment of an endowment fund for the specific purpose, "as it is apparent that the expenditure of any considerable amount for such purpose during the early history of the plan may render it difficult to meet the future obligations which have been assumed by the acceptance of regular contributions from the subscribing employees." The Board has evidently discovered, perhaps in good time, that no pension fund can be established in an existing service without proper provisions for the discharge of accrued liabilities or "retirements allowed subscribers who will not have contributed a sum proportionate to the obligations." In the present instance, the burden of the gratuities to the dependents of the deceased employees must be added to the accrued liabilities and should have been provided for from the outset.

✓ The pension fund of the New York Zoölogical Society, to which reference was made in the last Annual Report, furnishes another instance of those plans that have been established, with inadequate funds, apparently in the hope that the subsequent and in this case the recognized deficiency will somehow or other be covered by bequests and special subscriptions. How unjust to the prospective beneficiaries such a method is may be inferred from the description of the value of a pension, taken from the Nineteenth Annual Report of the Society. "It is only the men and the women who have worked hard—and lived hard—on small salaries, out of which nothing worth while can be saved, who can understand fully what this pension system means to our force. Without the prospect of a pension as a safe shield against calamity, every head of a family without an imperishable income knows no such thing as freedom from worry regarding the consequences to his wife and his children of his disablement or death, and a total loss of income." In the face of a subsequent statement, however, "the prospect of a pension" seems somewhat clouded, for, according to the report, "eventually the Pension Fund will imperatively need other subscriptions, to a total of about \$100,000 more, to meet the calls that future years inexorably will bring. The sooner this is provided by bequests, and special subscriptions, the better." Since it is exactly this type of optimism that has meant the insolvency of so many pension systems, further comment is perhaps unnecessary. Neither the society, nor any similar institution, nor a business concern would adopt such an attitude in the matter of wages to be paid to its employees or in the assumption of any other obligations.

The pension systems here described are typical only; without a central agency to keep some check, it probably would be impossible to give a complete list of the

accessions each year. From the few instances cited it will readily be recognized how very far from uniform the systems are.

The Newport News Shipbuilding and Dry Dock Company has established a pension system for its employees dependent on the earnings of the company. A pension of one per cent of the average yearly pay during the last ten years of service for each year of service is to be paid to three classes of pensioners: males who have reached the age of sixty-five and have had twenty-five years of service, and females who are fifty-five years of age and have had twenty years of service; males sixty years of age and females fifty years of age after thirty years of service; males seventy years of age and females sixty years of age after twenty-five years of service. Retirement is compulsory only in the third class.

A similar scheme to the above has been established by the Newport News and Hampton Railway, Gas and Electric Company. The scheme is administered by a Welfare Board of seven members appointed by the president. Pensions on the basis of one per cent of the average yearly wages during the last ten years of service are paid to three classes of employees, according as they retire on age at seventy, on physical incapacity owing to age and service between the ages of sixty and seventy after twenty-five years of service, and on disability after twenty-five years of service. The benefits of this scheme are limited to employees whose maximum wages for a period of more than ten years have not exceeded \$1800. The minimum pension has been fixed at \$240 per annum.

Sprague, Warner and Company of Chicago have instituted a plan that offers pensions on a graduated scale varying with the length of service. Employees may retire on the recommendation of officers of the company at the age of sixty and after twenty years of service on an annual pension of one-tenth of the total salary for the five years preceding retirement; this pension is increased by ten per cent for a service of from twenty-five to thirty years, and by twenty per cent for a service of thirty years or more; a weekly maximum is fixed in each case of \$20, \$22, and \$24. In addition to the pension the company grants disability allowances after twenty years of service irrespective of age, and in case of death also contributes to funeral expenses up to a maximum of \$300.

The pension plan of the Procter and Gamble Company of Cincinnati is to be maintained by a fund to which the company contributes annually \$12 per \$1000 of the aggregate yearly wages of the employees participating, with a limit of wages of \$2400 per annum. Out of this fund the company will pay a pension of seventy-five per cent of the average wages earned during the two years previous to retirement, with a maximum of \$1800 a year. After twenty years of service males on reaching the age of sixty and females the age of fifty may retire voluntarily, and must retire in the case of males at the age of sixty-five and at fifty-five in the case of females. Allowances are to be paid for permanent disability incurred after five years of service. A sick benefit fund is also maintained by the company, supported by contributions from the employees.

The Diamond Match Company of New York will, according to the pension scheme that it has adopted, pay to its employees a pension of one per cent of the average annual wages for the last ten years of service for each year of continuous service, with a minimum of \$25 and a maximum of \$100 a month. Male employees will be eligible to retirement at the age of sixty-five and after twenty-five years of service, and female employees at the age of sixty and after twenty years of service.

Under the plan of the Northwestern Mutual Life Insurance Company, Milwaukee, the employees after twenty years of service may retire voluntarily at the age of sixty-five and must retire at the age of seventy on a pension of one per cent of the highest annual salary during the ten years preceding retirement for each year of active service. The cost of the pension plan is to be carried as part of the regular expenses of the company, "in the expectation that by the adoption of such a system economic efficiency in the administration of the business of the company will be promoted."

The United Railways and Electric Company of Baltimore has made the following provisions for pensioning all employees, other than those on salary, "to encourage employees to remain in the service a sufficient time to develop capacity and acquire experience." Pensions are granted to those who have attained the age of seventy, whether incapacitated or not, those between the ages of sixty-five and sixty-nine who have become incapacitated, those under sixty-five who have been in continuous service for at least thirty years and have become incapacitated, and those who, after twenty years of continuous service, have become physically or mentally disabled in the company's employ. The amount of the pension allowance varies with the length of service, the average monthly wage during the ten years preceding retirement being taken as the basis. For service from twenty to twenty-five years the pension is at the rate of 30 per cent of the base figure, from twenty-five to thirty years 35 per cent, from thirty to thirty-five years 40 per cent, and for service of thirty-five years or more 50 per cent. The company bears the entire expense.

The employees of the United Railways Company of St. Louis may retire if incapacitated and after fifteen years of continuous service at the age of sixty, or after twenty years of continuous service at the age of seventy. The pension is one and one-half per cent of the average annual salary or wages received during the last ten years of service for each year of service, with a minimum of \$240 and a maximum of \$600 a year.

The Twin City Rapid Transit Company, which consists of the Minneapolis Street Railway Company, the St. Paul Railway Company, the Minneapolis and St. Paul Suburban Railroad Company, and the Minnetonka and White Bear Navigation Company, has vested the management of its pension system in a pension board composed of three officials of the above companies and two employees, appointed by the president to serve for one year. The pensions are granted on the following conditions: the number of years of continuous service, the average amount of salary or wage received during the last ten years of service, and the character and quality of service rendered. Employees may

retire between the ages of sixty-five and seventy on a pension of two per cent of the average monthly salary or wage received during the last ten years of service for each year of service, with a maximum of \$60 a month if retirement takes place at the earlier age and \$75 at the later age. There is no mention of the number of years of service required for retirement. The pension board may in its discretion retire employees who become permanently disabled and disqualified for service, provided their salary or wages did not exceed \$208.33 a month. The pension plan is part of the larger scheme for the Employees Mutual Benefit Association which was established at the same time.

The New York, Chicago and St. Louis (Nickel Plate) Railroad Company has established a pension plan for the retirement of its employees at the age of seventy provided they have been continuously in the service for at least ten years preceding their retirement. No person who enters the service after the attainment of forty-five years of age is eligible for a pension. The allowance consists of one per cent of the average monthly pay received during the last ten years of service for each year of service, with a minimum of \$5 and a maximum of \$200 a month. Employees who have not reached seventy years of age may be retired after an examination by physicians appointed for the purpose. A disability provision exists for employees who become unfitted for duty after twenty years of service.

**INDUSTRIAL AND INSTITUTIONAL PENSIONS
AND
TABULAR STATEMENT OF TEACHERS' PENSION SYSTEMS**

INDUSTRIAL AND

Name	Date of Establishment	Administration		Membership	Source of Funds	
		Board	Employee Representative		Employer	Employee
AMERICAN EXPRESS COMPANY	1875	The Company			The Company	
AMERICAN SUGAR REFINING Co. New York	1912	Pension Committee			\$300,000 appropriation with later additions, if necessary	
AMERICAN TELEPHONE & TELEGRAPH COMPANY & ASSOCIATED AND ALLIED COMPANIES	1913	Employees' Benefit Fund Committee of 5 members appointed by the Board of Directors			\$8,855,000 for all kinds of employees' benefits; interest at 4% on average unexpended balance, and at the end of each year appropriations to restore fund to its original amount with certain limitations	
ARMOUR & Co. Chicago	1911	Board of Trustees of 4 members appointed by the Directors		Compulsory for all men employees; optional with unmarried women	Annual contributions until \$1,000,000 is reached and this to be kept permanent	3% of salary up to \$7500 per annum
BUTLER BROTHERS Chicago	1909	Pension Committee of 3 members chosen by Board of Directors for overlapping terms			Appropriations by the Company	
J. I. CASE THRESHING MACHINE CO. Racine, Wisconsin	1915	Pension Board of 5 members (President, treasurer, and 3 members appointed by Board of Directors)		All employees giving full time to the Company's service	Pension account carried as part of the regular expenses of the Company's business	
CHENEY BROTHERS New York	1912	Pension Committee of 3 members appointed annually by the Director		Only members of the Benefit Association of the Company eligible to pension	Appropriations by the Company	
DIAMOND MATCH COMPANY New York	1914	Controlled by the Company			The Company	
EDISON ELECTRIC ILLUMINATING CO. Boston	1913	Committee of 5 members appointed by the President			The Company	
GORHAM MANUFACTURING CO. Providence	1903				1% of annual pay for labor is carried to the Pension Reserve Fund; pensions scaled down when amount paid out for 3 consecutive years exceeds the appropriation by 5%	

INSTITUTIONAL PENSIONS

Retiring Allowances			Disability Allowances		Refunds	Provision for Dependents	Discussion in Carnegie Foundation Reports
Amount	Service	Age	Amount	Requirement			
One-half of average annual salary for last 10 years of service. Maximum \$600	20 years	60	Same basis as pension	Incapacity before 60 years of age			
1% of average annual wage for last 10 years of service for each year of service. Minimum \$240; maximum \$5000	25 years	65 men, 60 women	Pension at discretion of Company	Permanent incapacity			
1% of average annual salary during last 10 years of service for each year of service. Minimum \$240	20 years 25 years 30 years	60 men, 55 women 55-59 men; 50-54 women No age limit 70 compulsorily	Pension at discretion of the Company	Total disability after 15 years of service		At the discretion of the Company pensions may be continued to dependents for one year after death	
2% of salary at the date of retirement for each year of service. Maximum \$5000 a year	20 years	57 men, at discretion of Board of Trustees; voluntarily at 60; compulsorily at 65. 50 women	At discretion of the Board of Trustees	Permanent and total incapacity after 15 years of service	Return of contributions without interest in case of resignation; return of contributions with interest at 4% in case of dismissal	The widow and children under 18 of an employee dying after 15 years of service to receive 1% of final salary for each year of service. In case of death before 15 years of service, contributions are returned to dependents at 4% interest. Half pensions to dependents of pensioners	VII, p. 47 f.
1% of average annual salary during last 5 years of service. The maximum \$1000; the minimum \$300, at discretion of Directors	20 years	60	Same basis as pension	Incapacity after 20 years of service			
1% of highest annual salary during last 10 years of service for each year of service. Minimum \$216; maximum \$600 a year	20 years	65 voluntarily or at the discretion of the Company; 70 compulsorily	Same basis as pension with payments limited to number of years of service	Permanent incapacity after 20 years of service with physical examination under 65			
10% of average monthly pay during last 10 years of service plus 1% of the same rate for each year of service	25 and incapacity 20 and incapacity 25 years 20 years	65-69 men 55-59 women 70 men 65 women	Same basis as pension; or with certain deductions at discretion of the Company	Total incapacity after 25 years of service if over 50 years of age		Pensions may be continued to dependents at discretion of the Committee	
1% of average annual salary during last 10 years of service for each year of service. Minimum \$300; maximum \$1200 a year	25 years 20 years	65 men 60 women					X, p. 71
1% of average annual pay during last 10 years of service for each year of service. Minimum \$300	15 years 20 years 30 years	65 men, 60 women 60 men, 55 women at discretion of Company At discretion of Company	Separate provisions exist for disability grants			Dependents may receive the difference between the deceased employee's annuities and six months of his pay at retirement if any	
1% of salary at date of retirement for each year of service. Maximum \$1000 a year	25 years 35 years 40 years	70 65 60					VII, p. 47

INDUSTRIAL AND

Name	Date of Establishment	Administration		Membership	Source of Funds	
		Board	Employee Representative		Employer	Employee
F. C. HUYCK & SONS Albany	1911	2 Committees of 3 members including the secretary of the Company and 1 person appointed by the Company	1 male and 1 female member elected by the female and male employees, respectively	Employees under 45 years of age on medical examination	The Company	
INTERNATIONAL HARVESTER CO. Chicago	1908	Board of 5 members appointed by the Directors			An annual allowance of \$100,000 to which expenditure is limited	
INTERNATIONAL SILVER CO.	1912	Pension Board of 5 persons, 4 appointed annually by Directors and President of the Company			The Company	
MORRIS & COMPANY Chicago	1909	Committee of five members	Three elected by employees	All employees on a weekly wage. Optional with existing employees; compulsory with men	The Company contributes \$25,000 a year until fund reaches \$500,000; allied companies contribute amounts proportionate to contributions of their employees	3% of salaries up to \$7500 per annum
NEWPORT NEWS SHIPBUILDING & DRY DOCK COMPANY	1915	Retirement Allowance Board of 3 members			The Company	
NEWPORT NEWS AND HAMPTON RAILWAY GAS & ELECTRIC CO.	1915	Welfare Board of 7 members appointed by the President of the Company			The Company	
NIAGARA FALLS POWER CO. Niagara	1911	Executive Committee of the Board of Directors			An amount deemed by the Directors of the Company available for pensions	
THE PROCTER & GAMBLE COMPANY Cincinnati	1915	Board of Trustees of 5 members	3 elected indirectly by employees		The Company contributes annually a sum equal to \$12 per \$100 of the aggregate yearly wage list	No contribution toward pension and death benefit
THE SOLVAY PROCESS CO. Syracuse	1908	Board of Directors			The Company set aside \$50,000 and adds a certain number of cents per ton of product	
SFRAGUE, WARNER & CO. Chicago	1915	Board of Directors			A surplus fund account was established out of the balance to the credit of the Profit and Loss Account	

INSTITUTIONAL PENSIONS (CONTINUED)

Retiring Allowances			Disability Allowances		Refunds	Provision for Dependents	Discussion in Carnegie Foundation Reports
Amount	Service	Basis Age	Amount	Requirement			
Minimum 25% of wages up to \$30 a week; 1% additional for each year of service beyond 20 years; maximum 50% of wages	20 years	70 men; 60 women	Half wages up to pensionable age	Total incapacity		Provision for dependents made in a contributory benefit fund	
1% of average annual salary during last 10 years of service for each year of service. Minimum \$216; maximum \$1200 a year	20 years	65 men on request or at discretion of Company; 70 compulsorily		Provision for disability under another scheme			VII, pp. 25, 47
	20 years	50 women on request or at discretion of Company; 60 compulsorily					
10% of the average monthly pay for last 3 years of service plus 1% of average monthly pay during last 10 years of service. Maximum \$1200	25 years 20 years	60 men } on request 50 women }	Same basis as pensions	Permanent and total incapacity after 20 years of service		Pensions may be continued to dependents at discretion of the Board	
	25 years 20 years	70 men } by title 60 women }					
2% of salaries on retirement for each year of service. Maximum \$5000	20 years	55 65 on request	Same basis as pensions	Incapacity after 20 years of service. Annual medical certificate required	In case of withdrawal return of contributions without interest; in case of dismissal return of contributions with 4% interest	One-half of the pension to widow or children of deceased employee	VII, pp. 47, 48
1% of average annual salary during last 10 years of service	25 years 20 years 30 years	65 men 55 women 60 men; 50 women					X, p. 70
	25 years men; 20 years women	Men at 70, women at 60 must retire					
1% of average annual salary during last 10 years of service. Minimum \$240	25 years	70 on request 60			Physical incapacity after 25 years of service		X, p. 70
One-twelfth of 1 1/4% of highest pay in any one year during last 10 years of service for each year of service. Minimum \$240 a year. When pension on this basis exceeds \$1200 a year, then 1% of the highest pay in any one year during last 10 years of service for each year of service with a minimum of \$1200 a year	10 years immediately before retirement	65	Pension at discretion of the Executive Committee	Unfitness for duty after 16 years of service and over 60			
75% of average wage during the 2 years preceding retirement	20 years	60 men; 50 women 65 men; 55 women compulsorily	Pension at discretion of the Board of Trustees up to \$1800 a year	Permanent total disability after 5 years of service		Dependents to receive a sum equal to deceased's wages for last year of regular employment up to \$2400	X, p. 70
On the basis of the maximum salary in ten highest paid years of service. Minimum is \$180, maximum is \$420 a year	15 years	Old age resulting in disability	Same basis as pensions	Disability after 15 years of service			
10% of the total salary for last 6 years of service with increments for years of service above 25 with a maximum of \$288	20 years	60	Pension at discretion of officers of the Company	Permanent disability after 20 years of service		Dependents receive funeral or other expenses up to \$300	X, p. 70

INDUSTRIAL AND

Name	Date of Establishment	Administration		Membership	Source of Funds	
		Board	Employee Representative		Employer	Employee
SYRACUSE CHILLED PLOW CO.	1913	Pension Board of 5 members under the President of the Company	5 employees of the Company appointed by the Board of Directors	Employees entering above the age of 45 not eligible	The Company	
TALBOT MILLS North Billerica, Mass.	1903	Board of Directors				
TIDE WATER OIL CO. Bayonne, N. J.	1914	Committee of 3 appointed by the President of the Company			The Company	
UNITED STATES STEEL & CARNEGIE PENSION FUND	1911	Board of Directors			The Corporation	
WELLS FARGO & CO. Chicago	1903	Board of Pensions of 5 members <i>ex officio</i>		No inexperienced person over 35 and no experienced person over 45 shall be employed except at discretion of the President	Pensions charged to operating expenses	
WESTERN UNION TELEGRAPH CO.	1913	Committee of 5 appointed by the Board			The Company set aside \$1,000,000 and maintains this total by annual appropriations from earnings	
WESTINGHOUSE AIR BRAKE CO. Wilmerding, Pa.	1914	Pension Board of 5 members appointed by the Board			The Company set aside \$110,000 and additions and accumulations thereof and makes annual appropriations to meet all demands on the fund	
AMERICAN MUSEUM OF NATURAL HISTORY New York	1913	Pension Board of 7 members appointed by the Trustees	3 employees	Employees in service above 21 if males, 18 if females, may join at their option; new employees above these ages and under 45 must join	The Corporation contributes annually a sum equal to 3% of the salary roll	3% of annual salary
NEW YORK ZOOLOGICAL SOCIETY	1914	Pension Board of 9 members appointed by the Executive Committee	4 employees	Employees in service over 21 if males, 18 if females, may join at their option; new employees above these ages and under 45 must join	Gift of \$100,000, and annual contributions by the Society	2% of salary

INSTITUTIONAL PENSIONS (CONTINUED)

Retiring Allowances			Disability Allowances		Refunds	Provision for Dependents	Discussion in Carnegie Foundation Reports
Amount	Service	Basis Age	Amount	Requirement			
1½% of average annual pay during last 10 years of service for each year of service. Minimum \$216	20 years	65	Pension at discretion of the Company	Total incapacity after 10 years of service			
1% of average wages during last 10 years of service for each year of service between 15 and 35 years; for service beyond 35 years 50% of such wages. Maximum \$500	15 years	Old age resulting in incapacity 70 years voluntarily	Same basis as pension	Disability after 15 years of service			
1% of average annual salary during last 10 years of service for each year of service. Minimum \$240	20 years 25 years 20 years	60 on recommendation of Committee 65 on request 70 compulsorily				Pension continued to widow or minor children for 1 year	IX, p. 45
1% of average monthly pay during last 10 years of service for each year of service	25 years 25 years	70 men 60 women } compulsorily 65 men } by request 65 women }	Same basis as pension	Permanent and total incapacity after 15 years of service			VII, p. 47 X, p. 68
1% of average monthly pay during last 10 years of service for each year of service	25 years	70 on request	Same basis as pension	Incapacity between the ages of 60 and 70 after 25 years of service on physical examination			VII, p. 47
1% of average annual pay during last 10 years of service for each year of service. Minimum \$240	20 years 25 years 30 years	60 men; 55 women 55 men; 50 women				Pensions may be continued to dependents for 3 months; life insurance benefits are also provided	
1% of average annual pay during last 10 years of service for each year of service. Minimum \$240; maximum \$1200		65-70				Provision is made for widows, children, grandchildren, parents, and grandparents	IX, p. 45
Pension varies with age and length of service with minimum of \$180 to \$420	15-30 years	60-65 men 55-60 women	A gratuity of 25% of average annual salary after first year of service with 2% for each additional year of service at the discretion of the Board	Permanent and total disability after 1 year of service	Contributions returned with 3% interest in case of resignation or dismissal. In case of dismissal after 15 years a pension is paid varying with length of service	25% of average annual salary after first year of service with addition of 2% for each additional year of service to legal beneficiaries if not yet in receipt of pension; dependents of a pensioner receive a lump sum varying with number of years the pension was received	VIII, p. 37 X, pp. 68 f.
Pension varies with length of service and age of retirement from 30% to 50% of average annual salary during last 3 years of service with minimum pensions from \$240 to \$420 a year	15-30 years	65-70 men 60-65 women	Same basis as pension after a vote of the Pension Board	Total and permanent disability	In the case of resignation or dismissal contributions returned with compound interest at 3½%	In case of death of an employee in service dependents receive a lump sum of contributions with 3½% compound interest. The widow of a pensioner if over 60 may receive 50% of deceased's pension; if under 60 the balance of the declining insurance	IX, p. 46 X, p. 69

INDUSTRIAL AND

Name	Date of Estab- lish- ment	Administration		Membership	Source of Funds	
		Board	Employee Rep- resentative		Employer	Em- ployee
ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH	1913	Board of Trustees			Gift of \$500,000 to form a nucleus	
ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY	1907	Pension Board of 6 members appointed by the President and under his di- rection			The Company	
CANADIAN PACIFIC RAILWAY COMPANY	1903	Pension depart- ment of 3 members			The Company	
CHICAGO & NORTHWESTERN RAILWAY COMPANY	1901	Pension Board of 5 members appointed by the Board of Directors		No person over 35 years may be taken into the service ex- cept by special au- thority	The Company; annual dis- bursement for pensions limited to \$200,000	
CHICAGO, ROCK ISLAND & PACIFIC RAILWAY COMPANY	1910	Board of Pensions of 5 members		No person over 35 years may be taken into the service ex- cept by special au- thority.	Charged to operating ex- penses	
COLUMBUS RAILWAY POWER AND LIGHT COMPANY	1914				The Company	
DELAWARE, LACKAWANNA & WESTERN RAILROAD COMPANY	1902	Pension Board of 6 officers of the Com- pany appointed by the Board of Man- agers			Annual appropriation by the Company	
THE GRAND TRUNK RAILWAY OF CANADA	1908	Pension Committee of 5 members nomi- nated by the Board of Trustees		No person over 50 years may be taken into the service		
HOUSTON AND TEXAS CENTRAL RAILROAD COMPANY	1903	Board of Pensions of 7 officers of the Company		No person over 45 years may be taken into the service ex- cept by special au- thority	The Company set aside \$25,000 and adds an annual sum not exceeding \$17,500 to the fund	
ILLINOIS CENTRAL RAILROAD COMPANY	1901	Board of Pensions of 7 members ap- pointed by Board of Directors		No inexperienced person over 35, and no experienced per- son over 45, may be taken into the ser- vice except by spe- cial authority	The Company set aside \$250,000 and makes an annual appropriation of not more than \$100,000, if necessary	

INSTITUTIONAL PENSIONS (CONTINUED)

Retiring Allowances			Disability Allowances		Refunds	Provision for Dependents	Discussion in Carnegie Foundation Reports
Amount	Service	Basis Age	Amount	Requirement			
Pension varies with age of retirement and length of service from 50% to 75% of full pay. Maximum \$10,000	15 years	60-65	Same ratio of full pension as years of service of the total required	Permanent mental or physical disability after 10 years of service		One-half of husband's retiring allowance to widow. Same amount to full orphans at discretion of Board of Trustees	VIII, p. 86
134% of the first \$50 of the highest average monthly pay during any 10 years of service and 34% of any sum above \$50. Minimum \$240; maximum \$900	15 years	65	Same basis as pension	Permanent incapacity after 15 years of service			VII, p. 44
1% of average monthly pay during the last 10 years of service for each year of service. Minimum \$240 a year	10 years	65 compulsorily 60-65at discretion of the committee after a physical examination					VII, p. 44
1% of average monthly pay during the last 10 years of service for each year of service. Minimum \$144 a year	20 years	70 compulsorily		Permanent disability after 20 years of service			VII, p. 44
1% of average monthly pay during the last 10 years of service for each year of service. Minimum \$20; maximum \$150	20 years	Between 65 and 70 according to occupation	Same basis as pension	Permanent disability after 25 years of service			
\$30 a month only in case of employees receiving less than \$200 a month pay	25 years	65	There is a contributory Coöperative Beneficial Association that provides for disability for short periods			A sum of \$500 is payable to dependents of deceased employees over 21 years of age and after 2 years of service receiving less than \$200 a month pay	
1% of average monthly pay during the last 10 years of service for each year of service	25 years 25 years	70 compulsorily 60-69 and incapacitated, medical examination required	Pension at discretion of Pension Board	Total incapacity			VII, p. 44
1% of highest average monthly pay during any 10 consecutive years of service for each year of service. Minimum \$200 per annum	20 years 15 years	65 compulsorily; 60 and permanent physical or mental incapacity; certified by chief medical officer; 50 in case of discharge	Same basis as pension	Incapacity due to employment after 10 years of service			VII, p. 44
1% of average monthly pay during the last 10 years of service	20 years	65 or 70 according to the nature of the employment	Same basis as pension at discretion of the Board	Male employees after 25 years of service, female after 20 years of service; or between ages 61 and 70 and 20 years of service			
1% of average monthly last pay during last 10 years of service for each year of service	10 years 10 years 10 years	70 compulsorily 65 61-70 if incapacitated. (Medical examination of all under 70)	Same basis as pensions	Permanent disability after 25 years of service for men and 20 years for women			

INDUSTRIAL AND

Name	Date of Establishment	Administration		Membership	Source of Funds	
		Board	Employee Representative		Employer	Employee
NEW YORK CENTRAL & HUDSON RIVER RAILROAD COMPANY	1910	Board of Pensions of 8 members appointed by President of the Company		Employees entering the service over 45 years of age are not eligible	The Company	
THE NEW YORK, CHICAGO & ST. LOUIS RAILROAD COMPANY	1914	Board of Pensions of 7 members appointed by President of the Company		Employees entering the service over 45 years of age are not eligible	The Company	
NEW YORK RAILWAYS CO.	1912	Pension Board of 6 members appointed by the Vice-President and General Manager of the Company		No employee whose maximum wages have exceeded \$1200 per annum for five years shall be eligible	The Company meets total demands in each year up to \$50,000 as the limit of the fund	
PENNSYLVANIA RAILROAD COMPANY AND ASSOCIATED LINES	1900	Board of officers of 6 members appointed by Boards of Directors of the participating company			The Company appropriates a limited sum each year	
THE PULLMAN COMPANY Chicago	1914	Board of Pensions of 5 officers of the Company appointed by President		No person over 45 years may be taken into the service except by special authority	The Company furnishes all necessary funds	
TWIN CITY RAPID TRANSIT CO. Minneapolis	1915	Pension Board of 5 members	Two employees appointed by the President	Only the employees who are members of the Employees' Mutual Benefit Association are eligible	The Company	
UNION PACIFIC RAILROAD CO. Omaha	1903	Board of Pensions of 7 members <i>ex officio</i>		No inexperienced person over 35 and no experienced person over 45 may be taken into the service except by special authority	The Company set aside \$100,000, and makes an annual appropriation of not more than \$50,000, if necessary	
UNITED RAILWAYS & ELECTRIC CO. Baltimore	1914				The Company	
UNITED RAILWAYS CO. St. Louis	1915	President or General Manager of the Company			The Company allows $\frac{3}{4}\%$ of the total operating expenses each year for pensions	
BANK OF HAMILTON, CANADA	1908	Board of 7 Directors	5 members chosen from the contributors	All employees		$\frac{3}{4}\%$ of salary up to \$5000
BANKERS' TRUST COMPANY, NEW YORK	1913	Board of Directors of the Company		Optional with existing staff; compulsory on new	The Company contributes to the fund	3% of salary

INSTITUTIONAL PENSIONS (CONTINUED)

Retiring Allowances			Disability Allowances		Refunds	Provision for Dependents	Discussion in Carnegie Foundation Reports
Amount	Service	Basis Age	Amount	Requirement			
1% of average monthly pay during the last 10 years of service. Minimum \$60; maximum \$3000 a year	10 years	70 compulsorily	Same basis as pension				VII, p. 44
1% of average monthly pay during the last 10 years of service. Minimum \$60; maximum \$2400 a year	10 years	70 compulsorily	Same basis as pension	Unfitness for duty after 20 years of service. Medical examination required			X, p. 72
From 25% to 40% of average annual wages for last 10 years of service according to length of service	25 years	70 compulsorily 65-69 and permanently unfit for service, certified by a medical officer					
1% of average monthly pay for the last 10 years of service for each year of service	30 years	70 compulsorily 65-69 and permanently unfit for service, certified by a board of 3 physicians					VII, p. 44
1% of average monthly pay during the last full year of employment. Minimum \$180 a year	25 years	70 men; 65 women	Same basis as pension at discretion of the Board	Permanent disability after 20 years of service			IX, p. 44
2% of average monthly salary during the last 10 years of service for each year of service. The maximum pensions vary with salary during last 10 years of service from \$600 to \$900	10 years	65-70, if in receipt of salary of less than \$208.33 per month during last 10 years of service	Amount and duration of pension at the discretion of the Board	Permanent disability and average monthly wage for last 10 years of service below \$208.33			X, pp. 71 f.
1% of average monthly pay during last 10 years of service for each year of service	20 years 20 years 20 years	70 compulsorily 65 60-70 if incapacitated. (Medical examination of all under 70)	Same basis as pension	Permanent disability after 25 years of service for men and 20 years for women			
From 30% to 50% of the average monthly salary during last 10 years of service according to length of service from 20 to 35 years	30 years	70 65-69 if incapacitated; below 65 if incapacitated	Same basis as pension	Physical or mental incapacity after 20 years of service			X, p. 71
1 1/4% of average annual salary during last 10 years of service for each year of service. Minimum \$240; maximum \$600 a year	20 years 15 years	70 60, if incapacitated					X, p. 71
2% of final salary for each year of service up to a maximum of 50% or \$5000	20 years	60	Same basis as pension	Permanent mental or physical incapacity after 20 years of service	Total contributions without interest	In case of death before pensionable age, contributions are returned to personal representatives	
2% of final salary for each year of service up to a maximum of 70% or \$5000	15 years 20 years	60 on request 65 compulsorily	Same basis as pension	Incapacity after 15 years of service	Total contributions with compound interest	Pension to family in the discretion of the Company or return of contributions with compound interest	

INDUSTRIAL AND

Name	Date of Estab- lish- ment	Administration		Membership	Source of Funds	
		Board	Employee Rep- resentative		Employer	Em- ployee
FIRST NATIONAL BANK OF CHICAGO	1899	Controlled by the Bank		Optional with existing employees ; compulsory on new	Bank	3% of salary
FIRST NATIONAL BANK Detroit	1913	5 trustees (President, Vice-President, Cashier; and 2 Directors)		Optional with existing staff; compulsory on new	Bank and other sources	3% of salary up to \$4000
FIRST NATIONAL BANK OF THE CITY OF NEW YORK	1911	Controlled by the Bank		All employees except the president, vice-president, and cashier may subscribe	Bank and other persons or parties	3% of salary
GUARANTY TRUST COMPANY OF NEW YORK	1914	Pension Board of 3 members appointed by the Directors		All employees	Appropriations out of profits from time to time	
NATIONAL BANK OF COMMERCE IN NEW YORK	1913	Board of Directors		Officers and clerical employees	Bank	
NATIONAL CITY BANK OF NEW YORK	1912	Board of Directors		Officers and clerical employees	Bank	
NATIONAL SHAWMUT BANK OF BOSTON	1911	Board of Directors		Employees under grade and salary of asst. cashier	Bank	
NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY, Milwaukee	1915	President of Company and officers designated by him under supervision of Board of Trustees or Executive Committee			"Pension Account" as part of regular expenses	

INSTITUTIONAL PENSIONS (CONCLUDED)

Retiring Allowances			Disability Allowances		Refunds	Provision for Dependents	Discussion in Carnegie Foundation Reports
Amount	Service	Basis Age	Amount	Requirement			
One-fiftieth of salary for each year of service with maximum of thirty-five-fiftieths and other limitations in case of high salaries. Duration of pension to equal length of service, if under 25 years	15 years	50 65 compulsorily	On same basis as retiring allowance	Ill-health or affliction. Medical certificate to be furnished each year	Return of contributions without interest in case of withdrawal or dismissal; 4% interest in case of death	One-half of the pension to widow and children	
2% of final salary for each year of service up to thirty-five-fiftieths of the final salary. Maximum \$2800. Duration of pension to equal length of service if under 25 years	15 years	50 65 compulsorily	On same basis as retiring allowance	Ill-health or affliction after 15 years of service	Return of contributions with 3% interest compounded half-yearly; in case of death with 4% interest per annum	One-half of the pension to widow and children	
2% of salary during 5 years preceding retirement for each year of service up to thirty-five-fiftieths of the average salary. Maximum \$6000. Duration of pension to equal length of service if under 25 years	15 years	65	On same basis as retiring allowance	Ill-health or affliction after 15 years of service	Return of contributions without interest in case of withdrawal or dismissal; in case of death with 4% interest	One-half of the pension to widow and children	
2% of average annual salary during 3 years preceding retirement up to thirty-five-fiftieths of salary. Minimum \$300; maximum \$5000	15 years	65				Pension to be continued to widow or dependents for a period at discretion of Bank	IX, p. 46
2% of aggregate salary during continuous service. Maximum \$5000		60 on request 65 compulsorily	80% of salary for first year and 60% thereafter for life or continuance of disability	Physical disability		The Bank provides life insurance for its employees and pays one year's salary with a maximum of \$5000	IX, p. 45
2% of average annual salary during 3 years preceding retirement up to 60% of salary. Maximum \$5000		60 on request 65 compulsorily				One payment to dependents of twice the amount of the annual pension depending on length of service	
30% of final annual salary	15 years	60 on request 65 compulsorily	Bank may deal with special cases as it sees fit				
1% of highest annual salary in last 10 years of service for each year of service	20 years	65 on request 70 compulsorily	Same basis as pension	Permanent incapacity			X, p. 71

TABULAR STATEMENT OF

State	Date of the Establishment	Administration		Expenses of Administration	Membership		Source of Funds	
		Board	Including Teachers' Representatives		Teachers already in Service	New Teachers	State, etc.	Teachers' Annual Contributions
ARIZONA	1912	State Board of Education					School Fund of the State	
CALIFORNIA	1913	State Board of Education			Optional up to Jan. 1, 1914	Compulsory	5% of inheritance and transfer taxes; income and interest from investments; donations, gifts, legacies; state appropriations	\$12
COLORADO	1909	Local Boards of Directors					Special levy on school district up to one-tenth of a mill; gifts and bequests	
CONNECTICUT New Haven	1911	Board of Retirement, 5 members	1 member elected by the teachers	Such sum from the general fund as is necessary for payment of clerical and other expenses	Compulsory	Compulsory	Appropriations, gifts, or bequests from public or private sources; deductions from salaries for absence or illness	1% of salary during first 10 years of service; 2% beyond that
New London	1911	Board of Retirement, 5 members	2 members of the teaching staff elected		Compulsory	Compulsory	Appropriations, gifts, or bequests; 6% of excise moneys or license fees; an appropriation from city fund	1% of salary
DELAWARE Wilmington	1911	Board of Retirement, 7 members	3 members of the teaching staff elected		Compulsory after passage of act	Compulsory	\$1000 yearly provided by City Board of Education; donations, legacies, bequests, gifts, etc.; \$2000 yearly from the Council of the city	1% of salary during first 10 years; 2% during next 10 years; 3% after 20 years. Maximum of \$50 in one year
ILLINOIS	1915	Board of Trustees of Illinois State Teachers' Pension and Retirement Fund, 5 members	3 elected by the teachers	Compensation of Secretary and expenses of members of the Board to be paid out of the fund	Optional up to Sept. 1920	Compulsory	One-tenth of one mill upon each dollar of the assessed valuation of all the taxable property of the state coming under the provisions of the act; donations and legacies, etc.	\$5 first 10 years; \$10, succeeding 5 years; \$30, succeeding 10 years
Chicago	1893	Board of Trustees, 9 members	6 members elected by contributions to the fund		Optional up to July 1, 1916	Compulsory	Donations, legacies, gifts, bequests, etc.; the interest on taxation for school purposes; and from public money up to twice the amount of the teachers' contributions annually	50 cents a month during first 5 years; \$1 a month during next 5 years; \$1.50 during the next 5; \$3 a month after 15 years of service
Peoria	1913	Board of Management, 9 members	6 must be elected by active teachers		Compulsory	Compulsory	Donations, legacies, gifts, bequests	\$5 first 5 years; \$10 next 5 years; \$15 next 5 years; \$30 beyond 15 years of service
INDIANA	1915	Board of Trustees of the Indiana State Teachers' Retirement Fund, 5 members	2 teachers appointed by the Governor	Clerical assistance and actual expenses of members of the Board to be paid for out of the fund	May join at any time on payment of arrearages	Compulsory	Gifts, devises, bequests, appropriations from legislature; money or property from other sources; interest on investments; semi-annual apportionments from state school tuition tax	\$10 first 15 years; \$20 next 10 years; \$25 next 10 years; \$20 up to and including fortieth year of service

TEACHERS' PENSION SYSTEMS

Amount of Total Contributions	Average Annual Salary 1912-13	Retiring Allowances			Disability Allowances		Refunds		Discussion in Carnegie Foundation Reports
		Amount	Basis		Requirement	Amount	Cause	Amount	
			Service	Age					
	\$676.70	\$600	25 years						
\$360	\$1,153.00	\$500	30 years, 15 years in state		Bodily or mental infirmity ; 15 years of service	Same ratio of full pension as years served are to 30 years			IX, p. 30
	\$598.68	\$480 maximum	25 years, 15 years in state	60 years, men ; 55 years, women	Permanent incapacity ; 10 years' service	\$480 maximum			IX, p. 36
A sum equal to the amount of the annuity of the first year	\$802.00	One-half of average annual salary during last 5 years of service. Minimum, \$400 ; maximum, \$800 a year	30 years, 20 years in the city ; 40 years of service up to time of establishment of the fund	55	Mental or physical incapacity certified by three physicians appointed by the Board of Retirement ; 15 years of service, 10 in the city	One-thirtieth of full pension for each year of service up to 30 years	Dismissal	Total contributions without interest	
	\$559.48	50% of average annual salary during last 5 years of service	30 years, 15 years in city at discretion of Board ; 35 years, 15 years in city or 65 years of age, on request		Mental or physical disability after 25 years of service, 15 in the city	Same basis as pensions		No refunds	
\$400	\$381.40	\$400 and a proportionate sum in case of retirement after 20 years and less than 35 years of service	30 years 35 years, 20 in city of Wilmington	65	Incapacitated for performance of duty after 20 years' service. Medical examination from time to time	Same ratio of full pension as years of service of the total required	Resignation Death	Two-thirds without interest One-half of total contributions without interest	
\$400	\$662.07	\$16 for each year of service, with \$400 maximum	25 years, 15 years in state	50	Incapacity declared by two physicians ; 15 years' service ; must pay a total of \$400 into the fund	\$16 for each year of service, with \$400 maximum	Ceasing to teach before completing 15 years' service	50% of amount contributed without interest	X, p. 51 f.
	\$1,034.00	\$400	25 years, 15 years in city		Permanent disability proved by three physicians at request of Board of Trustees after 15 years of service	Same ratio of full pension as years of service of the total required	Resignation before completing 15 years of service, or dismissal	One-half of total contributions ; the total in case of dismissal	VII, pp. 37, 38
\$450		\$400	25 years, 15 years in city		Permanent disability proved by three physicians at the request of the Board of Management after 15 years of service	Same ratio of full pension as years of service of the total required	Resignation before completing 15 years of service. Dismissal or failure of reappointment	One-half of total contributions Total contributions	
\$600-\$700	\$547.00	\$600-\$700 according to years of service above 35	35 years, 23 in state		Disability proved by medical examination at teacher's expense ; 25 years of service	\$350-\$575 according to years of service above 25	Leaving service for any reason	Amount contributed without interest	X, p. 52

TABULAR STATEMENT OF

State	Date of the Establishment	Administration		Expenses of Administration	Membership		Source of Funds	
		Board	Including Teachers' Representatives		Teachers already in Service	New Teachers	State, etc.	Teachers' Annual Contributions
Indianapolis	1907	Board of Trustees, 7 members	3 members elected by public school teachers of the city		Compulsory on teachers receiving \$450 a year or more	Compulsory on teachers receiving \$450 a year or more	Gifts, grants, devises, or bequests, a tax of 1 cent upon \$100 of taxable property in the city	1% of salary during first 15 years of service up to \$10; 2% of salary after first 15 years up to \$20
Terre Haute	1913	Board of Trustees, 5 members	3 members elected by public school teachers of the city		Optional	Optional	Gifts, grants, devises, or bequests; a tax of ¼ of one mill upon each \$1 of taxable property	\$10 a year for first 12 years of service; \$20 a year for next 8 years; \$25 a year for 10 years thereafter
KANSAS Topeka	1911	Board of Education			Optional	Optional	Gifts, etc.; a sum from general funds of not less than 1½ times the amount of the assessments on salary and not less than the amount necessary to meet the demands of the fund	1-1½% of salary
KENTUCKY Louisville	1912	Trustees of Teachers' Annuity Fund of 7 members	5 members employed in the service elected by teachers		Compulsory on teachers receiving \$450 a year or more	Compulsory on teachers receiving \$450 a year or more	Gifts, grants, devises, or bequests, etc.	1% of salary during first 15 years, up to \$10 a year; 2% up to \$20 a year thereafter
Cities of Second Class (Permissive)	1914	Board of Insurance and Annuity of 7 members	4 members elected by teachers	Remuneration to the Treasurer to be paid annually out of the fund as decided by the Board	Optional	Compulsory after passage and adoption of the act	\$1000 yearly out of funds for maintenance of schools; a levy of 1 cent on every \$100 of taxable property; donations, gifts, etc.	1% of the salaries of teachers during first 10 years and 2% thereafter; maximum \$40 a year
LOUISIANA New Orleans	1910	Board of Trustees of 7 members	3 members elected by teachers	Remuneration to the Secretary and any other employees fixed by the Board	Optional to Jan. 1, 1911	Compulsory	Gifts, grants, bequests	1% of salary of classroom teachers during first 10 years; 1½% during next 10 years; 2% thereafter. Non-classroom teachers pay 2% of salary
MAINE	1913	State Superintendent of schools					State appropriation of \$8000 a year first year, and \$25,000 annually thereafter	
MARYLAND	1908	State Board of Education					State appropriation of \$28,000 annually	
Allegany Co.	1912	Board of Trustees, 5 members	3 elected by teachers		Compulsory	Compulsory		1% first 10 years; 1½% during next 10 years; 2% thereafter. Maximum in each period \$10, \$15, \$18
Baltimore Co.	1912	Board of Trustees, 9 members	5 elected by teachers		Optional	Compulsory	Gifts, grants, bequests; county appropriations to meet the expenses of the fund	1% first 10 years; 1½% during next 10 years; 2% thereafter. Maximum in each period \$14.40, \$21.60, \$28.80
Baltimore	1908	Board of Trustees, 7 members	3 elected by teachers		do.	do.	do.	do.

TEACHERS' PENSION SYSTEMS (CONTINUED)

Amount of Total Contributions	Average Annual Salary 1912-13	Retiring Allowances			Disability Allowances		Refunds		Discussion in Carnegie Foundation Reports
		Amount	Basis		Requirement	Amount	Cause	Amount	
			Service	Age					
	\$761.00	\$600 maximum. Proportionate pension for less than 40 years of service	40 years		Aged, infirm, diseased, or disabled teachers after 15 years of service and examination by a physician; to be reexamined from time to time	Same ratio of full pension as years of service of the total required	Withdrawal from service before receiving benefit from the fund, or in case of death	One-half of the total contributions without interest	
\$510	\$655.00	\$300-\$600, according to years of service	20 years or more, 12 of which may have been outside				Withdrawal from service before completing 20 years of service, or in case of death	Total contributions without interest	IX, p. 37
At least \$250	\$700.00	\$500	30 years, 15 years in the city schools		Disability or incapacity after 25 years of service, 15 years in the city schools	Same ratio of full pension as years of service of the total required	Dismissal Withdrawal from service or death	Total contributions. One-half of total contributions without interest	
A sum equal to the first year's annuity if retiring after 30 years' service	\$650.00	\$400 maximum. Proportionate pension for less than 40 years of service	40 years for full pension, 30 years for proportionate pension. All service must be in the city		Disability or disease after 20 years of service on examination by a physician	Same ratio of full pension as years of service of the total required	Withdrawal from service	One-half of total contributions without interest	
A sum equal to the amount of the first year's annuity	\$359.47	30% of average salary for last 5 years of service plus 2% of this salary for each year above 25 years. Maximum, 50% or \$600	25 years, 20 in the state and 15 in the city concerned		Disability after 15 years of service in the state, and 10 in the city concerned, after medical examination	Proportionate amount of full pension according to length of service	Resignation or dismissal	Three-fourths of contributions without interest	
A sum equal to the amount of the first year's annuity	\$655.00	One-half of average annual salary for last 5 years of service. Minimum \$300; maximum \$600	40 years		Disability after 10 years of service after medical examination	Proportionate amount of full pension according to length of service	Resignation or death	One-half of contributions without interest	
	\$392.98	\$150-\$250 according to length of service	25-35 years, 20 years in state	60					VII, p. 33
	\$533.17	\$200	25 years; and physical or mental infirmity	60					VII, p. 26 IX, pp. 25, 28 f.
\$610 maximum	\$499.82	50% of average annual salary during last 5 years of service. Minimum \$200; maximum \$400	40 years, 20 years in the county		Disability after 20 years of service after medical examination	Same basis as salary	Ceasing to teach in the county or death	One-half of contributions without interest	
A sum equal to the amount of the first payment	\$628.12	50% of average annual salary during last 5 years of service. Minimum \$360; maximum \$600	35 years, 20 years in the county		do.	do.	do.	do.	
do.	\$745.61	do.	40 years, 20 years in the city		do.	do.	do.	do.	

TABULAR STATEMENT OF

State	Date of the Establishment	Administration		Expenses of Administration	Membership		Source of Funds	
		Board	Including Teachers' Representatives		Teachers already in Service	New Teachers	State, etc.	Teachers' Annual Contributions
MASSACHUSETTS	1913	Teachers' Retirement Board, 7 members	3 members elected by the beneficiaries	Annual state appropriations according to the estimates for expenses	Optional up to Sept. 30, 1914, or thereafter on paying arrearages with interest	Compulsory	State appropriation, annually	3% to 7% of salary; not less than \$35, nor more than \$100
Boston (1)	1900	Board of Trustees, 11 members	6 members elected by teachers	Maximum of \$1500 a year appropriated by the city	Optional	Compulsory	Gifts and legacies	\$3 from every alternate monthly payment
Boston (2)	1908	Board of Trustees, 3 members					Annual appropriation by city of 5 cents on each \$1000 of the valuation of the city	
MICHIGAN	1915	State Teachers' Retirement Fund Board, 6 members	At least one woman teacher. Appointed by Governor	Not less than \$1500 a year for Secretary, and actual expenses of members of the Board paid out of the fund	Optional within 1 year of the passing of the act	Compulsory	Donations, gifts, legacies, etc.; income from investments	1/4% of salary (up to \$5) in first 5 years; 1% (up to \$10) next 10 years; 2% (up to \$20) next 15 years
Detroit	1895	Board of Trustees, 7 members	3 teachers elected by members of the fund				Donations, legacies, gifts, bequests, etc.; appropriations by the Board of Education or the Common Council and the Board of Estimates; deductions from teachers' salaries for absence, etc.; and tuition of non-residents	1% to 3% of salary up to \$1000 salary a year
MINNESOTA	1915	Board of Trustees of the Teachers' Retirement Fund, 5 members	3 elected by the members of the retirement fund association	Salary of Secretary and all necessary expenses to be paid out of the fund	Optional up to Sept. 1, 1917	Compulsory	Donations, gifts, legacies, bequests, etc.; interest on investments; one-tenth of one mill on all taxable property in the state	\$5 first 5 years; \$10 second 5 years; \$20 next 10 years; \$25 next 5 years
Duluth	1909	Board of Trustees, 9 members	5 elected by the teachers		Optional	Optional	One-tenth of money received each year from property tax	\$10 first 5 years, \$20 next 5 years, and \$25 up to 30 years
Minneapolis	1909	Board of Trustees, 9 members			Optional	Compulsory	do.	\$10 first 5 years; \$20 next 5 years; \$25 up to end of 30 years of service
St. Paul	1909	Board of Trustees, 11 members	6 members elected by the members of the fund		Compulsory	Compulsory	do.	Initiation fee \$5; 1% of salary up to \$25 per year
MISSOURI	1901	Executive Committee, 9 members	5 members elected by the Teachers' Benevolent Fund Association		Optional	Optional	Gifts, donations, bequests, interest on investments	Members before Oct. 12, 1907, pay 1% of salary for 30 or 25 years; others pay 1% of salary up to \$15 a year for 35 years
St. Louis								
MONTANA	1915	Public School Teachers' Retirement Salary Fund Board, 3 members		Legislature to make such appropriations as may be necessary	Optional up to Jan. 1, 1916	Compulsory	Donations, legacies, gifts, and bequests; income and interest from investments	\$1 a month, up to and including 25 years

TEACHERS' PENSION SYSTEMS (CONTINUED)

Amount of Total Contributions	Average Annual Salary 1912-13	Retiring Allowances			Disability Allowances		Refunds		Discussion in Carnegie Foundation Reports
		Amount	Basis		Requirement	Amount	Cause	Amount	
			Service	Age					
From \$1050 to \$3000 in 30 contributions	\$667.00	Annuity purchased by contributions and an equal sum from the state	30 years	Voluntary at 60; compulsory at 70; compulsorily after 60 if incapacitated for service	Inability to render satisfactory service after 60	Same basis as pension	Withdrawal from service before retirement age; or in case of death	Amount contributed with compound interest at 3%	VIII, p. 46 IX, p. 28
\$540	\$1,001.00	Determined each year by the Board of Trustees. Maximum \$180	30 years, 10 years in the city		Incapacity certified by 2 physicians; 2 years of service		Resignation from service after 2 years	One-half of total contributions	VII, p. 41 IX, p. 25
		One-third of salary at time of retirement; minimum \$312, maximum \$600	30 years, 10 in the city	65	Incapacity. Same requirement of service as for pension	Same basis as pension			VII, p. 41
\$425 maximum or at least 60% of the prospective annuity for 1 year	\$519.52	One-half average annual salary for 5 years preceding retirement. Min. \$200; max. \$600. Proportionate amount for service from 25 to 30 years	30 years, 15 in the state		Bodily or mentally incapable in judgment of employing board; 15 years of service	One-thirtieth of full annuity multiplied by years of service	Withdrawal from service before retirement age	50% of the amount contributed without interest	X, p. 63
	\$979.09	\$330	30 years, 20 in city or 25 years in city on application; 25 years, 15 in city, at discretion of Board		Incapacity in judgment of Board. 20 years of service, 10 in city	Same as retiring allowance	Resignation or dismissal for cause	Not to exceed 50% of contributions at discretion of Board	
\$400	\$459.57	\$350-\$500 according to years of service	20 years, 10 years in the state		Physical or mental incapacity; 15 years' service	One-twentieth of the full annuity multiplied by the years of service	Resignation from service or death before receiving pension	50% of the amount contributed without interest	X, pp. 53 f.
\$650	\$724.00	\$333.33-\$500 according to years of service from 20 to 30 years	20 years		Incapacity after 2 years	An amount determined by the Board	Discharge Resignation	All the contributions without interest. One-half the contributions without interest	VII, p. 36 IX, p. 36
\$650	\$937.00	\$333.33-\$500 according to years of service from 20 to 30 years	20 years		Incapacity after 2 years of service	An amount determined by the Board	Withdrawal from service	An amount equal to the total contributions	
Maximum \$625	\$798.00	\$480	25 years, 15 years in the city		Incapacity after 5 years of service determined by 3 physicians	Same ratio to full pension as years of service to total required			
	\$993.00	Annual appropriation made and divided equally among annuitants	Members before Oct. 12, 1907, 30 years for men, 25 for women, 15 years in city. Other members 35 years' service and 15 years in Association		Physical or mental incapacity by vote of Board		Discharge from service Resignation	Total contributions Half of total contributions	
\$300	\$656.82	\$600	25 years, 15 years in the state		Physical or mental incapacity; 15 years' service	Same ratio of full pension as years served are to 25 years			X, p. 54

TABULAR STATEMENT OF

State	Date of the Establishment	Administration		Expenses of Administration	Membership		Source of Funds	
		Board	Including Teachers' Representatives		Teachers already in Service	New Teachers	State, etc.	Teachers' Annual Contributions
NEBRASKA	1915	State Board of Teachers' Pensions, 6 members	2 appointed by the Governor	Minimum salary of \$2000 for Secretary, and expenses of members of the Board to be paid out of the fund	Compulsory	Compulsory	Not less than twice the amount raised by teachers' contributions, and not less than amount needed to meet the necessary payments to be appropriated	1% to 1½% of salary
Omaha	1909	Board of Education					Grant of one and one-half times the amount of teachers' contributions each year	1% of salary
NEVADA	1915	State Board of Education			Optional up to Oct. 1, 1915	Compulsory	An ad valorem tax of 3 mills on the \$100 of all taxable property in the state. Donations, legacies, gifts, and bequests, and interest and income from investments	\$9 a year
NEW HAMPSHIRE	1915	State Superintendent of Instruction					Annual state appropriation	
NEW JERSEY (1)	1896	Board of Trustees of the Teachers' Retirement Fund, 9 members	5 teachers nominated by elected delegates and appointed by the Governor	Clerical and other expenses paid by the state up to \$1500 per annum	Optional up to Jan. 1, 1909	Compulsory	Donations, gifts, legacies, bequests, etc., and interest from investments	2% of salary first 10 years; 2½% next 5 years; 3% next 5 years. Not more than \$50 in 1 year
NEW JERSEY (2)	1903	Commissioner of Education					Deductions from the annual apportionment to counties for school purposes	
NEW YORK	1911	State Teachers' Retirement Fund Board, 6 members	3 representatives appointed by the Commissioner of Education	Maximum of \$2000 annually for Secretary out of the funds; also actual expenses of members of the Board	Compulsory after date on which the act came into effect	Compulsory	State appropriations from time to time to carry out purposes of the law; donations, legacies, gifts, etc., interest from investments; districts and cities contribute an amount equal to the sum contributed by the teachers employed by them	1% of salary
Albany	1907	Board of Trustees, 3 members			Optional	Compulsory	Donations, legacies, etc., 6% of excise moneys	1% of salary
Buffalo	1896	Board of Trustees, 5 members	2 members of teachers' associations <i>ex officio</i>		Optional	Optional	Donations, legacies, gifts, bequests, etc.; annual appropriations by the common council of city of a sum not exceeding the teachers' contributions of the preceding year	1% to 2% of salary

TEACHERS' PENSION SYSTEMS (CONTINUED)

Amount of Total Contributions	Average Annual Salary 1912-13	Retiring Allowances			Disability Allowances		Refunds		Discussion in Carnegie Foundation Reports
		Amount	Basis		Requirement	Amount	Cause	Amount	
			Service	Age					
25 pay-ments	\$903.00	\$500	25 years, 5 years in state 25 years, 15 years in state 25 years, all in state	60 55 No age re-quirement	Disqualified to work on account of ill-health	A yearly amount in proportion to length of service	Withdrawal, or in case of death	All contri-butions with 2% interest	X, p. 54
	\$889.19	\$500	Voluntary after 35 years' service, 20 years in the city; compul-sory after 40 years		Disability after 25 years' service	Proportionate allowance of full pension			IX, p. 36
\$270	\$634.86	\$500	30 years, 15 in the state		Physical or mental incapacity for work after 16 years of service in the state	An annual amount in same ratio of full pension as years of service are of 30 years			X, pp. 54 f.
	\$418.10	60% of average annual salary, for 5 years preceding retire-ment	30 years, 15 years in the state; 35 years Must hold state certificate	55 women 60 men	Enforced retire-ment thru disabil-ity	Same proportion of full pension as years of service are of total service required			X, p. 55
Maximum \$1000 or at least as much as the first year's an-nuity	\$816.58	60% of average annual salary for last 5 years of service. Minimum \$250; maximum \$650	20 years in state, and in-capacitated for service						VII, p. 27 IX, pp. 28 f.
		One-half of average annual salary for 5 years preced-ing retirement	35 years in pub-lic school work, 25 years in the state; or 70 years of age and last 20 years' service in state; or 32 years' service in the state and 75 years of age	70 75	Physical disability after 35 years' service in the state and age 70 years	Same as pension			
An amount of at least 50% of the expected annuity	\$935.70	One-half of average annual salary during 5 years preced-ing retirement. Maximum \$600	25 years, 15 years in the state		Physical or mental incapacity; 15 years' service, 9 years in the state	Same proportion of full pension as years of service are of 25 years			VII, p. 30
A sum equal to 30% of sal-ary for last 5 years of service	\$743.00	do.	30 years in city		Physical or mental incapacity after 20 years' service	Same proportion of full pension as years of service are of 25 years			VII, pp. 30-33
A sum equal to 40% of sal-ary at time of retire-ment	\$832.50	One-half of an-nual salary at time of retire-ment with a maximum of \$800	30 years for women, 24 years in city; 35 years for men, 28 years in city		Permanent inca-pacity for efficient service. 20 years' service for women; 25 years for men; four-fifths of period in city	Same basis as full pension	Failure to be reap-pointed	Total con-tributions without in-terest	

TABULAR STATEMENT OF

State	Date of the Establishment	Administration		Expenses of Administration	Membership		Source of Funds	
		Board	Including Teachers' Representatives		Teachers already in Service	New Teachers	State, etc.	Teachers' Annual Contributions
Cohoes	1908	Board of Trustees, 7 members	5 teachers elected by teaching body		Compulsory	Compulsory	Donations, legacies, gifts; a sum equal to 3% of salary roll from excise moneys; forfeitures and deductions of salaries	1% of salary. Maximum \$100 a year
Mt. Vernon	1909	Board of Education			Optional	Compulsory	Donations, legacies, and gifts; 5% of excise moneys of the city; deductions and forfeitures from salary	1% of salary
New York	1894	Board of Retirement, 7 members	3 members elected by the teachers	A maximum of \$1600 a year out of the fund	Compulsory	Compulsory	Fines and forfeitures from salary; donations, legacies, gifts; 5% of excise or license fees, etc.	1% of salary with a maximum of \$90 in any one year for all but supervising officials who have a maximum of \$40 a year.
Rochester	1905	Board of Trustees	2 members in service elected by teachers				Donations, legacies, gifts, etc.; annual appropriations by city of one-half of teachers' contributions, etc.	2% of salary
Syracuse	1897	Board of Education			do.	do.	Deductions for absence; donations, legacies, gifts; and other sources	Maximum of 1% of salary
Troy (and union free school district number one of Lansingburgh)	1906	Board of Trustees, 9 members			do.	do.	Deductions and forfeitures of salary, 5% of excise moneys, etc., donations, gifts, legacies	1% of salary; maximum \$12 a year
Westchester Co.	1909	Board of 5 appointed by county judge	Superintendent or principal		Optional	Compulsory	Donations, legacies, etc.; appropriations not exceeding total of teachers' assessments	1% of salary
NORTH DAKOTA	1913	Board of Trustees of the Teachers' Insurance and Retirement Fund, 5 members	3 members appointed by the Governor from teachers	Maximum of \$1200 annually for Secretary out of the fund; also actual expenses of members of the Board	Optional up to Jan. 1, 1914	Compulsory	A fund of ten cents for each child of school age in each county	1% of salary during the first 10 years up to \$20; 2% during the next 15 years up to \$40
OHIO Cincinnati Cleveland Columbus Dayton Hamilton Springfield Toledo Tiffin Youngstown	1911	Board of Trustees, 3-7 members	4-5 members elected by the teachers		Optional	Compulsory	Donations, legacies, gifts, and bequests; 1%-2% of gross receipts of taxation raised by the board of education; deductions for absence, etc.	\$2 a month from salary

TEACHERS' PENSION SYSTEMS (CONTINUED)

Amount of Total Contributions	Average Annual Salary 1912-13	Retiring Allowances			Disability Allowances		Refunds		Discussion in Carnegie Foundation Reports
		Amount	Basis		Requirement	Amount	Cause	Amount	
			Service	Age					
An amount equal to 20% of salary at time of retirement. Maximum \$300	\$550.00	One-half of annual salary at the time of retirement. Maximum \$600	30 years, 15 in city, on request; 40 years, 15 in city, compulsorily		Mental or physical incapacity after 20 years of service, 15 in the city	Proportional allowance of full pension according to years of service	Dismissal for cause	Total contributions without interest	
A sum equal to 30% of annuity	\$846.00	One-half of salary at time of retirement. Maximum \$800	25 years women; 30 years men; 15 years in city		Mental or physical incapacity after 20 years of service, 10 in city	Proportional allowance of full pension for years of service	Discharge or failure to be re-appointed	do.	VII, pp. 30-33
	\$1197.00	One-half of annual salary at the date of retirement with a minimum of \$600 and a maximum of \$1500 a year; of \$2000 for supervising officials; no limit for president or professor of Normal College	Voluntarily, 30 years, 15 in city. By vote of Board after 30 years of service	65	Mental or physical incapacity for performance of duty by vote of the Board after 20 years of service, 15 years in the city	Same ratio to full annuity as years of service to total required	Dismissal	do.	VII, pp. 39-41 VIII, pp. 53-55 IX, p. 39 X, pp. 59 ff.
40% of salary at time of retirement	\$768.00	One-half of annual salary at time of retirement with a maximum of \$500	20 years for women, 25 years for men; 15 years in city, in case of dismissal or compulsory retirement. Voluntarily, 30 years for women, 35 years for men; 15 years in city				Discharge or failure to be re-appointed	do.	
A sum equal to 20% of salary at time of retirement	\$766.31	do.	do.				do.	do.	
A sum equal to 20% of salary at time of retirement; maximum \$360	\$655.00	One-half of annual salary at time of retirement with a maximum of \$600	30 years, 15 years in city, with consent of Board; 37 years, 15 years in city, voluntarily		Mental or physical incapacity after 20 years of service, 15 years in the city	Same ratio to full annuity as years of service to total required	Dismissal	do.	
Amount equal to 50% of annuity expected		One-half of annual salary in 5 years preceding retirement. Maximum \$600; superintendent or principal \$800	25 years, 10 in county		Mental or physical incapacity; 15 years of service, 6 years in county	Same ratio of full pension as years of service are of total required	Dismissal or failure of re-appointment	do.	
A sum equal to at least to full amount of the annuity expected. Maximum \$800	\$515.79	One-fiftieth of average annual salary for five years preceding retirement multiplied by total years of service. Maximum \$750	25 years, 18 years in the state		Permanent mental or physical disability; 15 years of service	Same basis as in case of full pension	Withdrawal before retirement	One-half of the sum contributed without interest	IX, pp. 23, 31
	\$527.43	\$12.50 for each year of service, with a maximum of \$450	30 years, 15 in city paying the pension		Physical or mental disability; 20 years of service, 10 in city paying the pension; vote of a majority of Board of Trustees	Same basis as retiring allowance	Failure to be re-appointed before completing 20 years of service Resignation	Total contributions Half of total contributions	VII, p. 37 IX, p. 36

TABULAR STATEMENT OF

State	Date of the Establishment	Administration		Expenses of Administration	Membership		Source of Funds	
		Board	Including Teachers' Representatives		Teachers already in Service	New Teachers	State, etc.	Teachers' Annual Contributions
OREGON Portland	1911	Board of Trustees, 11 members	8 members elected by members of the Teachers' Retirement Fund Association		Optional	Compulsory	Gifts and donations; 8% of taxes levied for school purposes; fines and forfeitures on teachers	\$1 a school month during the first 10 years; \$2 a school month during the next 10 years; \$3 a school month for 10 years following
PENNSYLVANIA Scranton	1911	Retirement Board, 7 members	8 members elected by teachers		Compulsory	Compulsory	Annual appropriation by Board of School Directors of a sum equal to the amount of teachers' contributions; any other funds	\$9 a year during first 10 years; \$15 a year subsequently for 20 years
Pittsburgh	1915	Committee of 7 members	3 teachers elected by teaching force		Compulsory	Compulsory	Not less than 1½ times the amount of salary assessments or as much as is necessary to meet the required payments; gifts, etc.	1% to 3% of salaries up to \$1500
Harrisburg	1908	Retirement Board, 5 members	2 members elected by teachers		Compulsory except where teacher receives only the minimum salary under state law	Compulsory as for teachers in service	Annual appropriation by Board of School Directors of a sum equal to the amount of teachers' contributions; any other funds	2% of salary during the first ten years; 3% of salary thereafter. Maximum in one year \$50
Philadelphia	1907	Retirement Board, 5 members	2 members elected by teachers		Optional	Compulsory	Annual appropriations of a sum equal to the amount of teachers' contributions. Minimum \$50,000	1% of salary during first ten years of service; 2% of salary thereafter. Maximum in one year \$50
RHODE ISLAND	1907	State Board of Education					Annual appropriations to carry out the purposes of the act	
Newport	1898	Board of Trustees, 7 members	3 elected by teachers		Optional	Compulsory	Donations, legacies, bequests, etc.; appropriations	1% of salary
Providence	1897	Board of Trustees, 8 members	3 elected by teachers		Optional	Compulsory	Donations, legacies, bequests, etc.	1% of salary
SOUTH CAROLINA Charleston	1898	Board of Trustees, 3 members	1 member elected by teachers				Donations, legacies, gifts, bequests, etc.; 8% of gross income of the special school fund paid on the one mill tax until 1927	
UTAH	1913	State Teachers' Retirement Commission, 15 members	11 members elected by the members of the retirement association	No compensation for Commissioners or officers	Optional for 30 days after local organization	Compulsory	Donations, legacies, bequests, etc.; deductions for absences, etc.	1% of salary with maximum of \$12 a year

TEACHERS' PENSION SYSTEMS (CONTINUED)

Amount of Total Contributions	Average Annual Salary 1912-13	Retiring Allowances			Disability Allowances		Refunds		Discussion in Carnegie Foundation Reports
		Amount	Basis		Requirement	Amount	Cause	Amount	
			Service	Age					
\$800	\$1,006.00	\$338.33% at end of 20 years' service plus \$16.66% for each additional year of service. Maximum \$500	30 years		Total disability after 20 years of service, 10 years in city	Same as retiring allowance	Failure to be reappointed or discharge Resignation	Total contributions without interest Any sum in excess of \$300 without interest	
\$750	\$613.00	Maximum \$500	30 years, 15 years in the city		Total disability; 5 years of service; re-examination by physician				
	\$1031.38	From \$500 to \$600 a year according to years of service from 30 to 40 years	30 years on recommendation of superintendent; 40 years automatically; 15 years in city in each case		Physical or other disability or incapacity after 20 years of service	Proportionate amount of retiring allowance	Dismissal Resignation or death	Total contributions No refund	
25 payments	\$572.00	One-half of annual salary at date of retirement. Minimum \$300; maximum \$800	30 years, 20 in the city	60	Disability; 5 years of service	One-thirtieth of full annuity for each year of service			
25 payments	\$861.00	One-half of annual salary at date of retirement. Minimum \$400; maximum \$800. Smaller pensions may be supplemented out of Elkin Fund	30 years, 20 in the city; if physically or mentally incapacitated, or age 60	60	Disability; 5 years of service	One-thirtieth of full annuity for each year of service	Dismissal	Total contributions without interest	
	\$681.40	One-half of average annual salary for five years preceding retirement. Maximum \$500	35 years, 25 years in state. Must hold state teacher's certificate						VII, p. 27
	\$656.75	One-half of annual salary at time of retirement. Maximum \$600	30 years, 15 in city		Mental or physical incapacity after 10 years of service, after medical examination	Same basis as pension	Dismissal	A sum varying from total amount to one-third of contributions according to years of service	
	\$834.22	do.	35 years, men 30 years, women; 20 years in city		do.	do.			
	\$536.00	One-half of annual salary at time of retirement. Maximum \$250	25 years; need of maintenance must be proved						
Maximum \$360	\$633.22	One-half of average annual salary during last 5 years of service. Maximum \$600	30 years, 10 years in the state	60	Physical or mental disability; 30 years of service, 10 in the state	One-half of average annual salary during 5 years preceding retirement. Maximum \$600	In case of death	Total amount of contributions	VII, p. 36 IX, p. 32

[illegible]

**Discussion in
Carnegie
Foundation
Reports**

SUMMARY OF TEACHERS' PENSION SYSTEMS

A STUDY of 65 pension systems for teachers in the United States shows that the movement for such pensions is recent but widespread, and still extending. Generally the systems are administered by special boards, in which the teachers constitute a majority. Provision is as a rule made for retirement on the basis of service and of disability, but usually only for teachers entering the service after the establishment of the system. Funds are in most cases provided by teachers' contributions and by public appropriations in approximately equal amounts, but the funds arranged for are frequently insufficient to pay the pensions that have been promised.

The first system of teachers' pensions to be established in the United States appears to be that of Chicago, which was inaugurated in 1893. By the year 1900 nine other systems had been founded. By 1910 there were 25 more. Nearly half of all of the systems, however (31), have come into existence since 1910. Our general experience concerning teachers' pensions, therefore, is still very brief,—and this in spite of the fact that there are some questions concerning pensions that experience alone can answer.¹

There are now state wide pension systems for teachers in 22 states. There are local systems in 10 more. Thus more than half of the states are represented in the movement.²

The existing pension systems are sometimes administered by the Superintendent or Commissioner of Education, sometimes by the Board of Education, but in three-fourths of the systems there is a special pension board, or commission, or committee. These boards have from three to fifteen members, but over half of them have five or seven. Nearly all of these special boards (39 out of 42 reporting) include representatives of the teachers, who are generally (33 out of 39 reporting) elected by the teachers themselves. In slightly more than half of the boards the teachers' representatives constitute a minority. As, however, the superintendent or commissioner of education is frequently an *ex-officio* member, it may be said that the teachers' representatives generally constitute a majority.³

In nine-tenths of the systems (46 out of 51 reporting) membership is compulsory for new teachers. Membership has been optional for the teachers already in service at the inauguration of seven-tenths of the systems (34 out of 51 reporting). This illustrates the difficulty of providing fully for the retirement of teachers who are not in position

¹ Years of establishment of 65 systems reporting: 1893, 1894, 1895, 1896 (2), 1897 (2), 1898 (2), 1900, 1901, 1903, 1906, 1907 (4), 1908 (6), 1909 (9), 1910, 1911 (9), 1912 (5), 1913 (7), 1914, 1915 (9).

² State systems: Arizona, California, Colorado, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Rhode Island, Utah, Vermont, Virginia, Wisconsin.

Local systems: Connecticut, Delaware, Kansas, Kentucky, Louisiana, Missouri, Ohio, Oregon, Pennsylvania, South Carolina.

³ Size of 48 special boards reporting: 3 (4), 5 (14), 6, 7 (15), 8, 9 (9), 11 (3), 15.

Teachers' representatives on 44 boards reporting: Minority (24): 1/6, 1/5 (2), 2/7, 1/3, 3/8, 2/5 (6), 3/7 (11), 4/9; majority (20): 6/11 (3), 5/9 (4), 4/7, 3/5 (6), 2/3 (2), 5/7 (3), 11/15.

Direction of 65 pension systems reporting: Superintendent or commissioner 3, Board of Education 11, special pension board, commission, or committee 51.

to contribute their full share of the expense,—the difficulty that is known as the problem of accrued liabilities.

In all the systems retirement is on the basis of from 20 to 40 years of service, most frequently 30 years (32 out of 83 provisions). About two-fifths of the systems (24) make provision also for retirement on the basis of age, at from 50 to 75 years, most frequently 60 years for both men (10 out of 18 provisions) and women (8 out of 18 provisions). More than four-fifths of the systems (56 out of 65) have provisions for disability, usually a proportion of the full pension equal to the proportion of the full years of service completed before retirement.¹

Teachers contribute to the funds in four-fifths of the systems (56 out of 65), most frequently (36 out of 56) 1 or 1½ or 2 per cent of their salaries. In nine-tenths of the systems (52 out of 58) public funds are supplied also, from incidental sources (45 instances), school (8), or special taxes (16), deductions from teachers' pay (12), or, in nearly half of the instances (27 out of 65), from direct appropriations. The public contribution is not related to that of the teachers in as many systems as would be expected (only 12 reported). Where it is so related it most frequently equals the contribution of the teacher (6 out of 13 reporting).²

Return of the teachers' contributions in case of resignation is provided for in about one-half of the systems (28 out of 65), the refund being most frequently one-half of the contribution, without interest (19 out of 28 reporting). Return in case of dismissal is provided in about one-third of the systems (23 out of 65), this refund nearly always being (18 out of 23) all of the contribution without interest. Return in case of death is provided in one-fifth of the systems (12 out of 65), this refund being sometimes one-half (8 instances) and sometimes (4 instances) the entire contribution, usually without interest.³

The financial experience of these systems is, as has been said, yet brief. The representative salary (the median of averages ranging from \$307 to \$1197) of the teachers in the (61) systems reporting is \$665 a year. The representative pension in these systems (60 reporting) is \$500 a year (the median of averages ranging from \$181 to \$1050). The representative total contribution on the part of the teacher is \$510 (the median of 25 averages extending from \$250 to \$2025), a frequent requirement being a sum equal to the first year's annuity. When it is remembered that various systems appropriate only an amount equal to the teacher's contribution, it will be evident that a considerable number of systems are providing funds that will pay pensions for two

¹ Service for retirement: 20 years (8), 25 years (21), 30 years (31), 35 years (10), 40 years (8).

Age for retirement: Men: 50, 55, 58, 60 (10), 65 (5), 70 (2), 75; women: 50, 55 (2), 60 (8), 65 (5), 70 (2), 75.

² Teachers' contributions: 1½% to 2%, 1% (18), 1% to 2% (11), 1% to 3% (3), 1% to 1½%, 2% to 3% (2), 2%, 3% to 7%. Public contributions: ½ of teachers, Rochester, New York; 1½, Omaha, Nebraska; 1½ or more, Pittsburgh, Pa., Topeka, Kansas; equal or less, Buffalo, Westchester County, New York; equal, New York State, Harrisburg, Philadelphia, Scranton, Pa.; twice or less, Chicago; twice or more, Nebraska; three times, Cohoes, New York.

³ Refunds: In case of resignation: ½ of contribution or less, ½ without interest (19), ½ with interest, ⅔ without interest, ¾ without interest, all without interest (4), all with interest (2)—Massachusetts, Nebraska.

In case of dismissal: ½ or less, 1½ (3), ¾ without interest, all without interest (13).

In case of death: ½ without interest (8), all without interest (4), all with interest (2).

years only. There is general need, therefore, for further adjustment between the retirement privileges and the funds that the teachers are able, and the public is willing, to provide.¹

As a matter of actual experience, the disbursements of the New York City system, which was established in 1894, began to be larger than the receipts in 1910. The Teachers' Retirement Fund of New Jersey, established in 1896, required increased income in 1899, 1903, and 1906. The system in Porto Rico, established in 1898, was abandoned in 1905. The Boston system, established in 1900, encountered deficiencies in 1914. The Indianapolis fund, established in 1907, almost met financial difficulties in 1914. The Maryland fund, established in 1908, had to increase its resources in 1912 and 1914. The Virginia system, established in 1910, had to reduce its pension as early as 1912. The Cincinnati fund, established in 1911, had to reduce its pensions in 1914. The Illinois system, established in 1915, encountered a legislative investigation in the same year. Large privileges, small resources, and the lack of adjustment between the two promise similar difficulties for numerous other systems.

Meanwhile a safer and happier future for pension systems is promised by careful and comprehensive studies like those of the Massachusetts Commissions on Pensions in 1913 and 1914. The studies that are now being made in New York City have the opportunity of inaugurating a new era.

¹ Average salaries, 1912-13: \$307, \$329, \$359, \$381, \$392; \$418, \$459, \$499; \$515, \$519, \$527, \$583, \$596, \$547, \$550, \$559, \$572, \$598; \$613, \$622, \$628, \$633, \$634, \$650, \$655 (3), \$656 (2), \$662, \$667, \$676, \$681, \$683; \$700, \$724, \$743, \$745, \$761, \$766, \$768, \$798; \$802, \$805, \$816, \$834, \$846, \$861, \$876, \$889; \$932, \$935, \$937, \$963, \$979, \$993; \$1001, \$1006, \$1031, \$1034; \$1153, \$1197.

Representative pensions: \$181, \$200 (2), \$250, \$300, \$330, \$350, \$400 (6), \$416 (5), \$425, \$450 (6), \$480 (4), \$500 (11), \$550 (2), \$600 (13), \$650, \$750, \$800 (5), \$1050.

Average total contributions: \$250, \$270, \$300 (2), \$380 (3), \$390, \$400 (3), \$425, \$450, \$500, \$510, \$540, \$600 (2), \$610, \$625, \$650 (3), \$800, \$1000, \$2025.

PART IV
DE MORTUIS

DE MORTUIS

WAYLAND RICHARDSON BENEDICT

WAYLAND RICHARDSON BENEDICT was born in Rochester, New York, on January 9, 1848. He received his bachelor's degree in 1865 and his master's degree in 1868 from the University of Rochester. From 1866 to 1868 he was principal of Springside Academy, Pittsfield, Massachusetts. He studied at the Rochester Theological Seminary from 1868 to 1871, and at the University of Giessen during the year 1872-73. He was ordained to the Baptist ministry in 1873, and was pastor of the Mount Auburn, Ohio, Baptist Church from 1873 to 1875. In 1875 he was appointed professor of philosophy and history in the University of Cincinnati, a position which he held continuously for thirty-one years. In 1890-91 he acted temporarily as dean of the university. In 1907 he was made professor emeritus. Among his published writings are *The Nervous System and Consciousness*, *Outlines of the History of Education*, *A Psychological Table*, *Religion as an Idea*, and *Greek Thought Movements and Their Ethical Implication*.

Upon the recommendation of the President of the University of Cincinnati, the Carnegie Foundation, on December 10, 1906, granted to Professor Benedict a retiring allowance. He died July 22, 1915.

CYRUS FOGG BRACKETT

CYRUS FOGG BRACKETT was born at Parsonsfield, Maine, on June 25, 1833. In 1859 he graduated from Bowdoin College, and in 1863 obtained the degree of M.D. from the same institution. He also received the degree of A.M. from Princeton in 1896, and that of LL.D. from Lafayette in 1883, from Bowdoin in 1892, and from Princeton in 1896. He was appointed instructor, 1863, and then professor of chemistry, 1864 to 1873, in Bowdoin College. From 1873 to 1908 he was professor of physics in Princeton University, and became professor emeritus in 1908. The founding of the John C. Green School of Science in 1873, a conspicuous departure from the earlier policy of the institution, was due in large measure to President McCosh's confidence in the judgment of Professor Brackett. Professor Brackett's early training in medicine qualified him for his membership in both the local and state Boards of Health, and from 1888 to 1908 he held the position of president of the State Board. He was also president of the New Jersey Sanitary Commission for one year, and for many years chairman of the University Infirmary Committee.

The Carnegie Foundation, in appreciation of Professor Brackett's long and distinguished service, granted him a retiring allowance on May 5, 1908. He died at Princeton on January 29, 1915.

KATHARINE COMAN

KATHARINE COMAN was born at Newark, Ohio, on November 23, 1857. She obtained the degree of bachelor of philosophy from the University of Michigan in 1880, and in the same year was appointed instructor in rhetoric and composition at Wellesley College. In 1881 she became instructor and in 1883 professor of history, and in 1885 professor of history and political economy. During the year 1899-1900 Miss Coman served as Dean of the College. When, in 1901, a new department of economics and sociology was created, Miss Coman became its head, and held this position until her retirement in 1913. In addition to her work as an instructor Miss Coman traveled extensively, collecting material for her writing. Her published works include: *The Growth of the English Nation*, *History of England*, *English History as Told by English Poets* (with Katherine Lee Bates), *Industrial History of the United States*. Her last book, *Economic Beginnings of the Far West*, was dedicated to the Trustees of the Carnegie Foundation. Miss Coman was also interested in the betterment of the condition of working-women. After her retirement from teaching she began the study of social insurance in Europe, and aided in the drafting of social legislation adapted to American conditions.

Because of ill health the Carnegie Foundation granted Miss Coman, on January 20, 1910, a temporary allowance, which was made permanent on June 30, 1913. Miss Coman died at Wellesley, Massachusetts, on January 11, 1915.

MARTIN LUTHER D'OOGHE

MARTIN LUTHER D'OOGHE was born at Zennemaire, Holland, on July 17, 1839. He came to this country in early life, and was educated at the University of Michigan, from which he was graduated in 1862 with the degree of bachelor of arts, three years later receiving the degree of master of arts. He then went to the University of Leipzig, where he received the degree of doctor of philosophy in 1872. The University of Michigan conferred on him the honorary degree of doctor of laws in 1889, and in 1901 Rutgers College gave him the degree of doctor of letters. Professor D'Ooghe became assistant professor of ancient languages at the University of Michigan in 1867. From 1868 to 1870 he was acting professor, and from 1870 until his retirement full professor, of the Greek language and literature. He was ordained as a Congregational clergyman in 1878.

Professor D'Ooghe was noted for his classical knowledge, and had been a member of the managing committee of the American School of Classical Studies in Athens since 1883. He was a member of the Archaeological Institute of America, and in 1884 was president of the American Philological Association. Among his writings are *The Acropolis at Athens* and *The Antigone of Sophocles*. He also prepared an edition of *Demosthenes on the Crown*.

On the recommendation of the Board of Regents of the University of Michigan, the Carnegie Foundation granted Professor D'Ooge a retiring allowance on May 9, 1912. He died at Ann Arbor on September 12, 1915.

FREDERICK WYATT FAIRFIELD

FREDERICK WYATT FAIRFIELD was born in Oberlin, Ohio, on December 29, 1846. He was graduated from Oberlin College in 1868; studied in Chicago Theological Seminary in 1868-69, Andover Seminary in 1869, and was graduated from Oberlin Seminary in 1871. After occupying three pastorates he devoted himself to teaching. He was professor of Greek in Howard University from 1874 to 1882, and after occupying the same chair in Tabor College, Iowa, from 1882 to 1891, he returned to Howard as professor of Greek language and literature and political economy from 1891 to 1907. He was dean of the College of Arts and Sciences from 1893 until his retirement in 1907, and in the year 1905-06 he was acting president. His faithful work at Howard University inspired a well-known negro educator to say: "I am thankful to-day for the pen of Lincoln and the sword of Grant; but more thankful, by far, for the patient pedagogue who taught the negro his letters and set a million of us to reading."

In recognition of his thirty-three years of faithful service, the Carnegie Foundation, upon the recommendation of the president of Howard University, granted Professor Fairfield a retiring allowance, on June 7, 1907. He died in Los Angeles, California, November 6, 1914.

AUSTIN FLINT

AUSTIN FLINT was born at Northampton, Massachusetts, on March 28, 1836, the son of a distinguished physician of the same name. His early education was gained in private schools in Buffalo. He entered Harvard in 1852, but left at the end of a year to study engineering. In 1854 he attended several courses of lectures in the University of Louisville, including two in medicine, and afterward went to the Jefferson Medical College in Philadelphia, from which he was graduated in 1857. In 1885 this same college gave him the degree of doctor of laws, and in 1894 Princeton University conferred upon him an honorary degree of master of arts. From 1857 to 1859 Dr. Flint practised medicine, and from 1857 to 1860 he was editor of the *Buffalo Medical Journal*, which was founded by his father. During the year 1858-59 he was professor of physiology in the medical department of the University of Buffalo. In 1859 he removed with his father to New York, and was at once appointed professor of physiology in the New York Medical College. From 1860 to 1861 he was professor of physiology in the New Orleans School of Medicine; from 1861 to 1868 pro-

fessor of physiology in the Bellevue Hospital Medical School; from 1862 to 1868 professor of physiology in the Long Island College Hospital; and from 1898 until his retirement professor of physiology in the Cornell University Medical College. Dr. Flint was a pioneer in the illustrative teaching of experimental physiology, and for several years he and Dr. Dalton of Woodstock, Vermont, were alone in making the teaching of physiology to medical students their principal occupation.

Dr. Flint was one of the founders of Bellevue Hospital in 1861 and, besides his teaching there, was secretary and treasurer of the faculty and consulting physician for many years. During the Civil War he was an acting assistant surgeon of the United States Army from 1862 to 1865. In 1867, at the request of the Commissioner of Charities and Correction of New York City, he reorganized the dietary for the institutions under his charge. In 1875 Governor Tilden appointed him Surgeon-General of the State of New York, and he was reappointed two years later by Governor Robinson. He was consulting physician of the Manhattan State Hospital for the Insane in 1896, and president of the consulting board in 1899. More recently Dr. Flint was an alienist for the state in many cases.

Dr. Flint was an inventive experimenter and a frequent contributor to medical literature. Among his more extensive works are *The Physiology of Man*, in five volumes, *Textbook of Human Physiology*, *Source of Muscular Power*, and *The Handbook of Physiology*. He was decorated with the Order of the Liberator by the Republic of Venezuela in 1891. He was a fellow and in 1895 president of the New York Medical Association, a fellow of the American Association for the Advancement of Science, a member of the American Philosophical Society, and of sundry other learned societies.

The Carnegie Foundation granted him a retiring allowance on September 28, 1906. He died in New York City on September 22, 1915.

JOHN ELLSWORTH GOODRICH

JOHN ELLSWORTH GOODRICH was born at Hinsdale, Massachusetts, January 19, 1831. He entered the University of Vermont in 1849, where he founded the Delta Psi fraternity in 1850, and was graduated with honor in 1853. He was principal of the Academy at Hinsdale in 1853, and of the Washington County Grammar School at Montpelier from 1854 to 1856. He then entered the theological seminary at Andover, Massachusetts, where he graduated in 1860. He was ordained as a Congregational minister at Hinsdale in 1864. He served with the First Vermont Cavalry, of which he was chaplain, in 1864 and 1865, in the campaigns of the Wilderness, and of the Shenandoah Valley, and was present in the struggle about Petersburg and at the surrender of Appomattox. He was pastor of the church in Richmond, Vermont, from 1865 to 1868, and became superintendent of the city schools in Burlington in

1868. In 1871 he accepted the principalship of Kimball Union Academy at Meriden, New Hampshire, and in 1872 was called to the University of Vermont as professor of rhetoric and Latin. He continued at the university, occupying the chairs of Greek and Latin, and finally of Latin alone, until his withdrawal in 1907. Professor Goodrich had an intimate knowledge of the history of the university, and had an unusually wide and intimate acquaintance with the alumni.

On the recommendation of the president and trustees of the University of Vermont, the Carnegie Foundation, on May 2, 1907, granted Professor Goodrich a retiring allowance. He died at Burlington, Vermont, February 24, 1915.

ARTHUR EDWIN HAYNES

ARTHUR EDWIN HAYNES was born at Van Buren, Onondaga County, New York, on May 23, 1849. In 1875 he graduated with the degree of bachelor of science from Hillsdale College, where he later obtained the degrees of master of science in 1877, and master of philosophy in 1879. In 1896 his Alma Mater conferred upon him the degree of doctor of science *honoris causa*. Before graduating from college he taught in village schools. From 1875 to 1877 he was instructor and acting professor, and from 1877 to 1890 professor of mathematics and physics in Hillsdale College. From 1890 to 1893 he was professor in the Michigan School of Mines, from 1893 to 1896 he was assistant professor, and from that date, until his retirement in 1912, full professor in mathematics in the University of Minnesota.

Professor Haynes was a member of the Society for the Promotion of Engineering Education, and a contributor to its annual reports and to other educational papers. He was also a fellow of the American Association for the Advancement of Science. Professor Haynes's health having failed, the Carnegie Foundation, on May 9, 1912, granted him a permanent disability allowance. He died March 12, 1915.

RICHARD HUDSON

RICHARD HUDSON was born at Gateshead, England, September 17, 1845, and came to Hamilton, Ontario, in 1855. At fourteen years of age he was compelled to become self-supporting and entered the local telegraph office, where, as in a later, more responsible position at Pontiac, Michigan, he made rapid progress. In lieu of school advantages, he devoted all his spare time to reading and study. Entering ardently into the work of the Methodist Episcopal Church, at nineteen he gave up telegraphy and became a Methodist clergyman. His first year's experience in a small charge convinced him of the need of further education. After two years of preparation he entered the University of Michigan and, altho hampered by the necessity of earning his way, won a leading place in his class. After his graduation in 1871 he

held several pastorates, and spent two years, from 1874 to 1876, in travel and study in Europe. In 1878 he entered the University of Michigan Law School, and in 1879 was chosen to fill an assistant professorship in history in the university. He was in charge of the department from 1885 to 1888, when his position was made permanent. In 1897 he was made Dean of the Department of Literature, Science, and the Arts, but in 1907 he requested to be relieved from administrative labors, and for the next four years devoted himself to lecturing and teaching. In 1911 he was made professor emeritus.

Upon the nomination of the Board of Regents of the University of Michigan, the Carnegie Foundation, on April 20, 1911, granted Professor Hudson a retiring allowance. He died February 22, 1915, in New York City. He left a considerable inheritance, which he received shortly before his death, to the university, to found a chair of history.

AGNES IRWIN

AGNES IRWIN was born in 1841 in Washington, D. C. The following year her father, William Wallace Irwin, then Congressman from Pittsburgh, was appointed, by President Polk, United States minister to Denmark. Her mother, Sophia Dallas Irwin, was a descendant of Benjamin Franklin and of Alexander James Dallas, Secretary of the Treasury and Secretary of War under Madison. After returning from Copenhagen Miss Irwin lived in Washington, and in 1862 moved with her family to New York, where she continued her studies and began to teach. In 1869 she became principal of a girls' school in Philadelphia, and taught there until 1894, when she was appointed the first Dean of Radcliffe College. During her holidays Miss Irwin traveled extensively, meeting and making friends with interesting people all over the world. She received an honorary degree from the Western University of Pennsylvania in 1895, that of Litt.D. from the University of Pennsylvania in 1898, and that of LL.D. from St. Andrew's, Scotland, in 1906. Miss Irwin served as a commissioner from Massachusetts to the Paris Exposition in 1900, and, for a time, as state commissioner for the blind.

On the recommendation of the President of Radcliffe College, the Foundation granted Miss Irwin a retiring allowance on November 15, 1909. She died at her old home in Philadelphia on December 5, 1914.

THOMAS RAYNESFORD LOUNSBURY

THOMAS RAYNESFORD LOUNSBURY was born at Ovid, New York, January 1, 1838. He was graduated from Yale in 1859, and for the next two years was assistant editor of *Appleton's Encyclopaedia*. At the beginning of the Civil War he became

lieutenant in the One Hundred and Twenty-Sixth New York Volunteers, serving until peace was declared. After five years devoted to miscellaneous literary work he became reader in 1870, and in the following year professor of English, in the Sheffield Scientific School at Yale. This position he held until he was made emeritus professor in 1906. He also served as librarian of the school from 1873 to 1906. Professor Lounsbury received the degrees of A.M. from Yale in 1877; LL.D. from Yale in 1892, from Harvard in 1893, and from Aberdeen in 1906; L.H.D. from Lafayette in 1895, and from Princeton in 1896. He was a member of the American Academy of Arts and Letters.

Professor Lounsbury was often called the "dean of American literary scholarship," and was internationally known as an authority on the English language. He was actively interested in the campaign for a simplification of English spelling, and was elected president of the Simplified Spelling Board in 1910. His many publications include a *History of the English Language*, *Life of James Fenimore Cooper*, *Studies in Chaucer*, *Shakespeare as a Dramatic Artist*, *Shakespeare and Voltaire*, *The Standard of Pronunciation in English*, *The Text of Shakespeare*, *The Standard of Usage in English*, *English Spelling and Spelling Reform*, *The Early Literary Career of Robert Browning*, and a *Book of American Verse*. In 1904 he edited, with a biographical sketch, the complete writings of his intimate friend, Charles Dudley Warner. His many magazine contributions were models in their attractive and popular presentation of the results of sound scholarship. At the time of his death he had in preparation a volume on *Tennyson and His Times*.

On June 21, 1906, the Carnegie Foundation, on the recommendation of the President of Yale University, granted Professor Lounsbury a retiring allowance. He died at New Haven, on April 9, 1915.

CHARLES WILLIAM MACCORD

CHARLES WILLIAM MACCORD was born on March 18, 1836, in the township of Northeast, Dutchess County, New York. He prepared for college at Amenia Seminary, and was graduated from Princeton in 1854 with the degree of bachelor of arts. Three years later he received the degree of master of arts in course. After graduation he taught at Schenectady, New York. In 1858 he became draftsman with the De Lamater Iron Works in New York City. His work there attracted the attention of Captain John Ericsson, who claimed his services for nine years, notably in drafting the plans of the "Monitor," the prompt construction of which was greatly facilitated by Mr. MacCord's ability. In 1868 General George B. McClellan selected Mr. MacCord as chief draftsman on the Stevens Battery, which was then in construction at Hoboken, New Jersey. In 1870 he became chief draftsman for the Department of Docks at New York City. When the Stevens Institute of Technology was

organized, in 1871, the trustees chose Mr. MacCord to develop the course in mechanical drawing, and he remained a professor in that institution until his retirement from teaching in 1906. His publications include: *Lessons in Mechanical Drawing*, *Kinematics of Machinery*, *Practical Hints for Draftsmen*, *Progressive Exercises in Mechanical Drawing*, *Elements of Descriptive Geometry*, *Velocity Diagrams*, and many technical and engineering monographs. Professor MacCord's geometrical treatment of mathematical curves, and his investigations of lobed wheels and gear-tooth forms, aided materially in the development of engineering. In 1881 Princeton University conferred upon him the degree of doctor of science. He was a member of the American Society of Mechanical Engineers.

Upon the recommendation of the President of Stevens Institute, the Carnegie Foundation granted Professor MacCord a retiring allowance on June 7, 1906. He died in Hoboken, New Jersey, April 13, 1915.

JOSEPH WALKER MARSH

JOSEPH WALKER MARSH was born at Burlington, Vermont, March 22, 1836. He graduated in 1857 from the University of Vermont, of which his father, James Marsh, was president. He held the degrees of master of arts from the University of Vermont and from Bishop's College, Canada, and the degree of doctor of philosophy from Pacific University (1883). During the ten years following his graduation he taught in Wisconsin and Canada, and in 1859 spent a year at Union Theological Seminary. In 1867 he went to Pacific University, Oregon, as professor of Greek and Latin, which position he held for forty years. He also served as librarian, and it was principally thru his interest and efforts that the present library was accumulated and housed in a new building.

In recognition of his long service to education, the Carnegie Foundation, on the recommendation of the president and board of trustees of Pacific University, granted Professor Marsh a retiring allowance on June 7, 1910. He died in Forest Grove, Oregon, January 28, 1915.

FRANK OLIN MARVIN

FRANK OLIN MARVIN was born at Alfred Center, New York, in 1852. Graduating in 1871 from Allegheny College with science honors, he devoted several years to practical engineering work. In 1874 he received the degree of master of arts from Allegheny, and in 1875 was appointed instructor in mathematics and physics at the University of Kansas. In 1883 he became professor of civil engineering, and when, in 1891, the university was reorganized and a school of engineering was established, he was elected dean. From this time until 1912, when impaired health compelled him

to retire from active work, he was untiring in his labors for the upbuilding of this school. He was one of the charter members and the first president of the Kansas chapter of the Society of the Sigma Xi, and in 1909 and 1910 the national president of that organization. As a member of the American Association for the Advancement of Science (vice-president in 1896), of the American Society of Civil Engineers, of the Society on Testing Materials, of the Kansas Academy of Science, and as advisory member of the Kansas State Board of Health, he took an active part in all work for the encouragement of research and the advancement of scientific knowledge.

On the recommendation of the State Board of Administration of the University of Kansas, and in recognition of his valued services, the Carnegie Foundation, on May 15, 1914, granted Dean Marvin a retiring allowance. He died at San Diego, California, February 6, 1915.

THEODORE BURNHAM MERRICK

THEODORE BURNHAM MERRICK was born at Burnham, Maine, on January 29, 1833. He was educated in the public schools of Burnham, leaving at an early age to become a skilful wood-worker. In 1877 he became the first instructor in wood-turning and pattern work at the Massachusetts Institute of Technology. From 1878 to 1884 he took charge of the designing and pattern making in a commercial foundry. In 1884 he returned to the Massachusetts Institute of Technology as instructor in wood-work, and in 1886 he was made instructor in wood and foundry work, which position he held until his retirement.

The Carnegie Foundation granted him a retiring allowance on January 21, 1909. He died at Arlington, Massachusetts, on May 15, 1915.

THOMAS WESLEY MILLS

THOMAS WESLEY MILLS was born in Brockville, Ontario, February 22, 1847. After attending the common and high schools he took an arts course in the University of Toronto, obtaining the degree of master of arts. He taught for several years and then entered the Medical Faculty of McGill University, obtaining the degrees of doctor of medicine and master in surgery in 1878. Following a period of European study, chiefly in England, he returned to McGill in 1882 as assistant in the Department of Physiology, then in charge of Dr. (now Sir William) Osler. Following a second period of European study of physiology, especially in Germany, he returned to take charge of that work at McGill. In 1886 he became professor, and occupied that chair until his retirement in 1910.

His publications include works on *Animal Physiology*, *Comparative Physiology*, and *The Nature and Development of Animal Intelligence*. Professor Mills was a member

of many learned societies, and fellow of the Royal Society of Canada. He was founder of the Montreal Society for the Study of Comparative Psychology, president of the Natural History Society of Montreal, and vice-president of the Society of American Naturalists.

The Carnegie Foundation granted Professor Mills a retiring allowance on January 20, 1910. He died in London, England, February 13, 1915.

ANDREW WHEELER PHILLIPS

ANDREW WHEELER PHILLIPS was born at Griswold, Connecticut, March 14, 1844. After graduating from the preliminary schools he became a teacher in the public schools of eastern Connecticut. After four years devoted to higher studies he became an instructor in mathematics at Cheshire Academy, where he remained from 1864 to 1875. In 1873 he obtained the degree of Ph.B. at Yale, and in 1877 the degree of doctor of philosophy. He was awarded the honorary degree of master of arts by Trinity College in 1875. In 1875 he was called to Yale as tutor in mathematics. In recognition of his ability as teacher and administrator he was promoted to be assistant professor in 1881, professor in 1891, and dean of the graduate school in 1895. He resigned active work as dean in 1911.

Dean Phillips collaborated with colleagues in publishing *The Graphic Algebra*, *The Elements of Geometry*, and *Trigonometry and Tables*, which last has been translated into Japanese. For thirteen years he edited the *Connecticut Almanac*.

On May 15, 1914, the Carnegie Foundation, on the recommendation of the president of Yale University, granted Dean Phillips a retiring allowance. He died at New Haven, Connecticut, February 6, 1915.

FREDERICK WARD PUTNAM

FREDERICK WARD PUTNAM was born at Salem, Massachusetts, on April 16, 1839. A direct descendant of General Israel Putnam, he had intended entering West Point, but was persuaded by Louis Agassiz to go instead to Harvard, where he graduated with the degree of bachelor of science in 1862. In 1868 Williams College conferred upon him an honorary degree of master of arts, and in 1894 the University of Pennsylvania gave him the degree of doctor of science. Professor Putnam began his scientific work at Salem, as curator, 1856-66, superintendent, 1866-73, and vice-president, 1871-94, of the Essex Institute, and director of the Peabody Museum, 1869-73. In 1874 he was connected with the Kentucky geological survey, and in 1876-79 with the United States survey west of the 100th meridian. His connection with Harvard began as assistant to Professor Agassiz, from 1857 to 1864. In 1875 he became curator of the Peabody Museum there. In 1886 he became also professor of

American archaeology and ethnology, retaining this post until his retirement in 1909. From 1894 to 1903 he was also curator in the American Museum of Natural History in New York, and from 1903 to 1909 professor of anthropology and director of the anthropological museum at the University of California.

Professor Putnam was also state commissioner of inland fisheries, 1882-89, and chief of the department of ethnology of the Chicago Exposition, 1891-94. He received the Drexel gold medal for archaeological research and the Cross of the Legion of Honor. He was president of the Boston Society of Natural History, 1888-89; the American Folk-lore Society, 1891; the American Association for the Advancement of Science, 1898; the American Anthropological Association, 1905-06; vice-president of the Antiquarian Society of Philadelphia, and of the Washington Academy of Sciences, 1913; and secretary of the American Association for the Advancement of Science from 1873 to 1898. He was a fellow of the American Academy of Arts and Sciences, a member of the National Academy of Sciences and the American Philosophic Society, and fellow and member of some sixty other learned bodies in the United States, South America, and Europe.

Professor Putnam published some four hundred monographs of zoölogy and anthropology, was a founder of the *Naturalists' Directory* and of the *American Naturalist*; and edited the proceedings of the Essex Institute, the American Association for the Advancement of Science, the Peabody Museum at Harvard, and the anthropological publications of the University of California.

The Carnegie Foundation granted Professor Putnam a retiring allowance on September 30, 1909. He died in Cambridge, Massachusetts, on August 14, 1915.

SAMUEL WALKER SHATTUCK

SAMUEL WALKER SHATTUCK was born on February 18, 1841, at Groton, Massachusetts. He was educated at Lawrence Academy, Groton, and at Norwich University, Vermont. Upon his graduation from Norwich with the degree of bachelor of science in 1860, at the age of nineteen, he was appointed instructor in mathematics in his alma mater. Upon the outbreak of the Civil War he at once resigned his position to join the Sixth Regiment, Massachusetts Volunteer Militia, the first regiment to reach Washington after President Lincoln's call for troops in April, 1861. He served during the entire war, altho wounded in the battle of Cedar Creek. He became adjutant of the Eighth Vermont Regiment and subsequently Adjutant-General and Assistant Inspector-General of the Vermont Brigade. After the war Professor Shattuck returned to Norwich University as adjunct professor of mathematics and military tactics. He was acting president in 1865-66, and vice-president from 1866 to 1868. Continuing his military service, he was Inspector-General of Vermont with the rank of colonel in 1867-68. In 1868 Professor Shattuck went to the University of Illinois

as assistant professor of mathematics and instructor in military tactics, and in 1870 he became professor of civil engineering. He was made full professor of mathematics in 1871, a position which he held for an unbroken period of forty-one years, until his retirement in 1912. During this time he held other positions of importance in the university, including that of acting regent for six months in 1873, that of business agent and manager from 1873 to 1905, and that of comptroller of the university from 1905 to 1912.

Professor Shattuck received from Norwich University the degrees of master of arts in 1867, of civil engineer in 1871, and of doctor of laws in 1907. The University of Illinois conferred upon him the degree of doctor of laws upon his retirement in 1912. He was a fellow of the American Association for the Advancement of Science, and a member of the American Mathematical Society and of the Loyal Legion.

On May 9, 1912, the Carnegie Foundation granted Professor Shattuck a retiring allowance for his distinguished service to the cause of education. He died on February 13, 1915, at his home in Champaign, Illinois.

FRANK ASBURY SHERMAN

FRANK ASBURY SHERMAN was born on October 4, 1841, at Knox, Maine. He was preparing for college when the Civil War began. He enlisted on July 28, 1862, served as corporal in the Fourth and Nineteenth Maine regiments, was several times wounded, and lost his left arm at the battle of the Wilderness. At the conclusion of the war he entered the Chandler Scientific Department of Dartmouth College, maintaining a high standing, altho he was obliged to teach several terms during his college course. He received the degree of bachelor of science in 1870, and that of master of science in 1873. For a year after receiving his first degree he was instructor in mathematics in Worcester Polytechnic Institute, and then returned to Dartmouth as associate professor of mathematics in the Chandler School. In 1872 he was promoted to a full professorship, and in 1893, upon the merging of the Chandler School with the college, he became professor of mathematics on the Chandler foundation.

On October 19, 1911, the Carnegie Foundation granted Professor Sherman a retiring allowance. He died in Hanover, New Hampshire, on February 26, 1915.

JOHN ELBRIDGE SINCLAIR

JOHN ELBRIDGE SINCLAIR was born at Brentwood, New Hampshire, on March 28, 1838. He was educated at Dartmouth College, from which he received the degree of bachelor of science in 1858. In 1879 he received the degree of master of arts, and in 1883 the degree of doctor of philosophy, from the same institution. In 1858 he began teaching at Adrian, Michigan, and from 1859 to 1863 was a tutor at Washing-

ton University. In 1863 he became assistant professor of mathematics in the Chandler School of Science at Dartmouth, and from 1866 to 1869 was full professor of mathematics. In 1869 he was made professor of mathematics in the Worcester Polytechnic Institute, which position he held until his retirement.

The Carnegie Foundation granted Professor Sinclair a retiring allowance on May 5, 1908. He died at Worcester on September 11, 1915.

THOMAS BLISS STILLMAN

THOMAS BLISS STILLMAN was born at Plainfield, New Jersey, May 24, 1852. He began his college work at Alfred University, but after a short time transferred to Rutgers College, where he received the degree of bachelor of science in 1873, and that of master of science in 1876. He spent the following year in the Fresenius Laboratory at Wiesbaden, Germany. In 1883 he received the degree of doctor of philosophy from the Stevens Institute of Technology. He was instructor in analytical chemistry at Stevens Institute from 1874 to 1876, and from 1881 to 1886, and professor of the same subject from 1886 to 1903. In the latter year he became professor of engineering and chemistry, retaining this post until his retirement in 1909.

Professor Stillman was appointed state inspector of oils for New Jersey in 1884, and in 1911 he was appointed city chemist for Jersey City and Bayonne, and examiner in chemistry for the Municipal Civil Service Commission of New York City. He was a member of the American Chemical Society, the Society of Chemical Industry of London, the American Institute of Mining Engineers, the International Association for Testing Materials, the American Electro-Chemical Society, and the Société Chimique de Paris. He was also a corresponding member of the Edinburgh Society of Arts and Sciences, and of the Deutsche Chemische Gesellschaft. As a descendant of one of the oldest families in New Jersey he was a member of the Sons of the Revolution, the Society of Mayflower Descendants, and the Order of Washington. Professor Stillman was the author of *Engineering Chemistry*, and wrote many monographs on technical and applied chemistry.

On the recommendation of the president of Stevens Institute, Professor Stillman was granted a retiring allowance on September 30, 1909. He died at Jersey City, August 11, 1915.

JAMES TRUMAN

JAMES TRUMAN was born at Abington, Pennsylvania, November 22, 1826. He received the degree of doctor of dental surgery from the Pennsylvania College of Dental Surgery in 1854. In 1904 the University of Pennsylvania conferred on him the honorary degree of doctor of laws. From 1864 to 1876 he was demonstrator and

professor of operative dentistry in the Pennsylvania College of Dental Surgery. From 1882 until his retirement in 1909, at the age of eighty-two, he was professor of dental pathology, therapeutics, and materia medica in the University of Pennsylvania; from 1883 to 1895 he was dean of the Dental School.

Professor Truman was a member of numerous American and European dental organizations, and a former president of the American Dental Association. He was editor of the *Dental Times* from 1865 to 1869, and of the *International Dental Journal* from 1890 to 1905. He was also a contributor to a number of medical and dental journals.

Professor Truman was granted a retiring allowance by the Foundation on June 4, 1909. He died at Philadelphia on November 26, 1914.

JOHN HOWARD VAN AMRINGE

JOHN HOWARD VAN AMRINGE was born in Philadelphia on April 3, 1835. His family removed in 1848 from Philadelphia to New York, where he received most of his early education from his father. In 1854 he entered Yale, but left at the end of his sophomore year and taught private pupils for two years. In 1858 he entered Columbia College as a member of the junior class, graduating with the degree of bachelor of arts in 1860. He received the degree of master of arts from Columbia in 1863. In 1877 the University of the State of New York conferred upon him the honorary degree of doctor of philosophy. Columbia honored him with the degree of doctor of literature in 1890, and Union College in 1895 with the degree of doctor of laws.

Dean Van Amringe began his half-century of work at Columbia in the autumn following his graduation, when he became a tutor in mathematics. In 1863 he was made adjunct professor, and in 1865 full professor of mathematics. From 1892 to 1910 he was head of the department of mathematics; from 1894 to 1896 he was dean of the School of Fine Arts; and from 1896 to 1910 dean of Columbia College. He was the founder of the School of Mines, and for a time, in 1899, he was acting president of the university. When he retired in 1910 he was made dean emeritus.

Dean Van Amringe was an author and editor of mathematical texts, a fellow of the American Association for the Advancement of Science, a member of the American Mathematical Society, the New York Mathematical Society, and of the New York Historical Society. He was also a vestryman of Trinity Church and a trustee of the Society for Promoting Religion and Learning in the State of New York, and of the New York Bible and Common Prayer Book Society. His other interests, however, were obscured by his long association with and devotion to Columbia College. He was the chief speaker at its celebrations, and the chief authority on its history, which he wrote in several forms. He was interested in athletics, he organized the alumni association, he founded the Columbia University Club. His marked individ-

uality, sympathy, and justice won the affection of fifty college classes, and this, thru tradition, song, and story, extended beyond the university and the city, until his name came to suggest an academic ideal.

In recognition of Dean Van Amringe's long and distinguished service, the Foundation granted him a retiring allowance on January 20, 1910. He died at Morristown, New Jersey, September 10, 1915.

REPORT OF THE TREASURER

REPORT OF THE TREASURER

To the Chairman and Trustees of the Carnegie Foundation for the Advancement of Teaching:

IN accordance with the provisions of Article IX of the By-laws, the chairman of the board of trustees designated Messrs. Patterson, Teele & Dennis, certified public accountants, to audit the accounts of the Foundation for the last fiscal year. The books of the treasurer were accordingly turned over to this firm, whose report follows.

October 19, 1915.

WE have audited the accounts of the Carnegie Foundation for the Advancement of Teaching, including the accounts of the General Endowment and the Division of Educational Enquiry, for the year ending September 30, 1915.

Income from investments has been duly accounted for and expenditures have been duly authorized and vouched.

The securities representing the investments were produced to us and the cash in bank and on hand has been duly verified.

The accompanying Income and Expenditure Account and Balance Sheet are in accordance with the books of the Foundation, and we hereby certify that they exhibit a true and correct statement of the finances at September 30, 1915.

(Signed) PATTERSON, TEELE & DENNIS,
Accountants and Auditors.

INCOME AND EXPENDITURE
FOR THE YEAR ENDING SEPTEMBER 30, 1915
GENERAL ENDOWMENT

Income

From Securities in the Endowment Fund	\$651,053.34	
From other Investments	39,880.00	
<i>Total Income from Investments. Exhibit 1</i>		\$690,933.34
Accumulation of Bond Discount—Net		3,147.36
Interest on Bank Balances		3,811.84
Decrease of Surplus Income for the year ending September 30, 1915		14,960.24
		<u>\$712,852.78</u>

Expenditure

RETIRING ALLOWANCES:

To Professors, Officers, and Widows in Institutions on the Associated List	\$554,121.69	
To Professors, Officers, and Widows not in Institutions on the Associated List	120,603.28	\$674,724.97

ADMINISTRATION:

Salaries	\$25,416.39	
Traveling Expenses of Trustees, etc.	3,146.22	
Rent	4,300.00	
Postage (proportion)	340.91	
Stationery and Office Supplies (proportion)	570.24	
Professional Fees, etc. (Actuarial and other)	1,580.00	
Telephone and Telegraph (proportion)	164.47	
Depreciation of Furniture and Fittings, 10%	652.68	
Miscellaneous	380.02	\$36,550.93

PUBLICATION:

Printing Ninth Annual Report (proportion of cost)	\$1,256.70	
Labor, Postage, etc., Mailing (proportion of cost)	144.06	\$1,400.76
Printing Minutes		115.24
Printing 1000 Pamphlets	60.88	\$1,576.88
<i>Total Expenditure for the year ending September 30, 1915</i>		<u>\$712,852.78</u>

INCOME AND EXPENDITURE
FOR THE YEAR ENDING SEPTEMBER 30, 1915
DIVISION OF EDUCATIONAL ENQUIRY

Income

From Securities in the Endowment Fund. <i>Exhibit 2</i>	\$50,000.00
Interest on Bank Balances	300.50
Decrease of Surplus Income for the year ending September 30, 1915	4,333.12
	<u>\$54,633.62</u>

Expenditure

GENERAL:

Salaries	\$4,364.73	
Traveling Expenses	1,155.63	
Professional Fees	285.00	
Rent	2,400.00	
Stationery and Office Supplies (proportion)	570.25	
Postage (proportion)	340.92	
Telephone and Telegraph (proportion)	164.46	
Depreciation of Furniture and Fittings, 10%	169.11	
Miscellaneous	337.03	\$9,787.13

STUDY OF LEGAL EDUCATION:

Salaries	\$6,933.01	
Traveling Expenses	1,763.94	
Professional Fees	2,455.00	
Printing Redlich Report and Postage on same	3,776.38	
Sundries (clerical help, etc.)	95.93	\$15,024.26

STUDY OF TRAINING OF TEACHERS:

Salaries	\$7,439.56	
Clerical Help	1,750.48	
Traveling Expenses	2,153.99	
Professional Fees	1,250.00	
Printing and Stationery	1,377.94	
Postage	1,920.50	
Sundry Expenses	98.59	\$15,991.06

STUDY OF ENGINEERING EDUCATION:

Salaries	\$6,999.96	
Traveling Expenses	1,048.80	
Professional Fees	2,514.30	
Printing, Stationery, and Postage	413.77	
Sundry Expenses	14.42	\$10,991.25

Carried forward

\$51,793.70 \$54,633.62

REPORT OF THE TREASURER

<i>Amount brought forward</i>		\$51,793.70	<u><u>\$54,633.62</u></u>
PUBLICATION:			
Ninth Annual Report (proportion of cost)			
Printing	\$2,513.39		
Postage, Labor, etc., Mailing	<u>288.12</u>	\$2,801.51	
Printing Minutes (proportion)		<u>38.41</u>	<u>\$2,839.92</u>
<i>Total Expenditure to September 30, 1915</i>			<u><u>\$54,633.62</u></u>

BALANCE SHEET, SEPTEMBER 30, 1915

GENERAL ENDOWMENT

<i>Assets</i>	
INVESTMENTS. <i>Exhibit 1</i>	\$14,052,191.03
INTEREST ACCRUED ON INVESTMENTS TO SEPTEMBER 30, 1915. <i>Exhibit 1</i>	223,870.85
CASH IN BANK AND ON HAND	104,873.63
OFFICE FURNITURE AND FITTINGS	\$6,526.84
Less Reserve for Depreciation	5,042.85
	1,483.99
	<u>\$14,382,419.50</u>
<i>Funds and Accumulations</i>	
ENDOWMENT FUND	\$13,000,000.00
ENDOWMENT ACCUMULATIONS. <i>Exhibit 3</i>	150,000.00
CARNEGIE FOUNDATION, EDUCATIONAL DIVISION	1,443.25
INCOME AND EXPENDITURE ACCOUNT:	
Accumulations to September 30, 1914	\$1,245,936.49
Less Decrease for the year ending September 30, 1915. <i>Schedule B</i>	14,960.24
	1,230,976.25
	<u>\$14,382,419.50</u>

THE DIVISION OF EDUCATIONAL ENQUIRY

<i>Assets</i>	
INVESTMENTS. <i>Exhibit 2</i>	\$1,250,000.00
INTEREST ACCRUED ON INVESTMENTS TO SEPTEMBER 30, 1915. <i>Exhibit 2</i>	19,166.66
CASH IN BANK	4,016.64
CARNEGIE FOUNDATION, GENERAL ACCOUNT	1,443.25
SUNDRY ACCOUNTS RECEIVABLE, ETC.	154.01
OFFICE FURNITURE AND FITTINGS	\$1,691.07
Less Reserve for Depreciation	286.38
	1,404.69
	<u>\$1,276,185.25</u>
<i>Funds and Accumulations</i>	
ENDOWMENT FUND	\$1,250,000.00
SUNDRY ACCOUNTS PAYABLE	724.76
INCOME AND EXPENDITURE ACCOUNT:	
Accumulations to September 30, 1914	\$29,793.61
Less Decrease for the year ending September 30, 1915. <i>Schedule B</i>	4,333.12
	25,460.49
	<u>\$1,276,185.25</u>

STATEMENT OF SECURITIES AND INCOME THEREON
SEPTEMBER 30, 1915

GENERAL ENDOWMENT

Schedule A, Exhibit 1

Securities	Date Acquired	Par Value	Interest due Date	Book Value	INTEREST	
					Accrued Year ending Sept. 30, 1915	Accrued Sept. 30, 1915
U.S. Steel Corporation, Series "A" Registered 50 year 5% Gold Bonds. Due April 1, 1951	May 3, 1911, \$1,000,000.00 Dec. 2, 1911, \$1,000,000.00	\$2,000,000.00	Jan. 1 & July 1	\$2,000,000.00	\$100,000.00	\$25,000.00
U.S. Steel Corporation, Series "B" Registered 50 year 5% Gold Bonds. Due April 1, 1951	Dec. 1, 1905	2,850,000.00	Feb. 1 & Aug. 1	2,850,000.00	143,111.11	23,750.00
U.S. Steel Corporation, Series "D" Registered 50 year 5% Gold Bonds. Due April 1, 1951	Dec. 1, 1905	2,850,000.00	Apr. 1 & Oct. 1	2,850,000.00	142,500.00	71,250.00
U.S. Steel Corporation, Series "E" Registered 50 year 5% Gold Bonds. Due April 1, 1951	May 29, 1912	1,000,000.00	May 1 & Nov. 1	1,000,000.00	50,000.00	20,833.33
U.S. Steel Corporation, Series "F" Registered 50 year 5% Gold Bonds. Due April 1, 1951	Dec. 1, 1905	3,300,000.00	June 1 & Dec. 1	3,300,000.00	165,000.00	55,000.00
Baltimore & Ohio R. R. Co. Southwestern Division, First Mtge. 3½% Gold Coupon Bonds. Due July 1, 1925	June 9, 1906, \$20,000.00 Dec. 6, 1906, \$30,000.00	50,000.00	Jan. 1 & July 1	47,685.16	1,750.00	437.50
Pennsylvania Co. 4% 15-25 year Gold Coupon Loan 1906. Due April 1, 1931	June 9, 1906	50,000.00	Apr. 1 & Oct. 1	49,453.47	2,000.00	1,000.00
The Lake Shore & Michigan So. Ry. Co. 25 year 4% Gold Coupon Bonds. Due September 1, 1928	June 9, 1906	50,000.00	Mar. 1 & Sept. 1	49,487.72	2,000.00	166.67
Chicago, Burlington & Quincy R.R. Co. Illinois Division, First Mtge. 4% Bonds. Due July 1, 1949	April 1, 1906	50,000.00	Jan. 1 & July 1	50,442.47	2,000.00	500.00
Southern Pacific R. R. Co. First Refunding Mtge. 4% Gold Bonds. Due January 1, 1955	Aug. 1, 1906, \$20,000.00 Apr. 29, 1908, \$30,000.00	50,000.00	Jan. 1 & July 1	46,198.78	2,000.00	500.00
Oregon Short Line R. R. Co. 4% Refunding Gold Bonds. Due December 1, 1929	Oct. 3, 1906, \$60,000.00 Dec. 12, 1907, \$35,000.00 June 12, 1914, \$5,000.00	100,000.00	June 1 & Dec. 1	93,696.42	4,000.00	1,333.33
Oregon Railroad & Navigation Co. 4% Consolidated Mtge. Gold Bonds. Due June 1, 1946	Dec. 6, 1906, \$30,000.00 Apr. 30, 1908, \$5,000.00 Apr. 10, 1913, \$5,000.00 June 13, 1914, \$2,000.00 June 17, 1914, \$2,000.00 June 25, 1914, \$6,000.00	50,000.00	June 1 & Dec. 1	48,774.20	2,000.00	666.67
The City of New York Registered 3½% Corporate Stock for replenishing the Fund for Street & Park Openings. Due May 1, 1954	April 3, 1907	50,000.00	May 1 & Nov. 1	45,697.18	1,750.00	729.17

Northern Pacific—Great Northern, Chicago, Burlington & Quincy R. R. Co. Collateral Trust 4% Joint Bonds. Due July 1, 1921	July 2, 1907, \$70,000.00 Oct. 4, 1909, \$30,000.00	100,000.00	Jan. 1 & July 1	97,479.02	4,000.00	1,000.00
Central R. R. Co. of New Jersey General Mtge. 5% Bonds. Due July 1, 1927	Aug. 7, 1907	20,000.00	Jan. 1 & July 1	24,040.96	1,000.00	250.00
Union Pacific R. R. Co. 20 year 4% Convertible Gold Bonds. Due July 1, 1927	Oct. 11, 1907, \$35,000.00 Feb. 7, 1908, \$58,000.00 June 11, 1908, \$7,000.00	100,000.00	Jan. 1 & July 1	91,338.60	4,000.00	1,000.00
Chicago, Indiana & Southern R. R. Co. Consolidated Mtge. 4% 50 year Gold Bonds. Due January 1, 1956	July 10, 1908	55,000.00	Jan. 1 & July 1	50,686.81	2,200.00	550.00
Atchison, Topeka & Santa Fe Ry. Co. Transcontinental Short Line First Mtge. 4% 50 year Gold Bonds. Due July 1, 1958	Sept. 3, 1908, \$26,000.00 Apr. 10, 1913, \$4,000.00 Sept. 6, 1913, \$15,000.00 Sept. 29, 1913, \$5,000.00	50,000.00	Jan. 1 & July 1	46,449.23	2,000.00	500.00
Union Pacific R. R. Co. First Lien and Refunding Mtge. 4% Bonds. Due March 1, 2008	Nov. 9, 1908, \$36,000.00 Apr. 10, 1913, \$14,000.00	50,000.00	Mar. 1 & Sept. 1	47,859.25	2,000.00	166.67
Chesapeake & Ohio Ry. Co. General Funding and Improvement Mtge. 5% Bonds. Due January 1, 1929	March 12, 1909	50,000.00	Jan. 1 & July 1	50,584.06	2,500.00	625.00
Atchison, Topeka & Santa Fe Ry. Co. General Mtge. 4% Bonds. Due October 1, 1995	May 17, 1909, \$25,000.00 June 12, 1914, \$25,000.00	50,000.00	Apr. 1 & Oct. 1	49,248.80	2,000.00	1,000.00
Chicago, Milwaukee & St. Paul Ry. Co. 25 year 4% Gold Bonds. Due July 1, 1934	Feb. 3, 1910, \$75,000.00 June 16, 1914, \$25,000.00	100,000.00	Jan. 1 & July 1	94,527.96	4,000.00	1,000.00
Baltimore & Ohio (Pittsburgh, Lake Erie & W. Virginia System) R. R. Co. Refunding 4% Gold Bonds. Due November 1, 1941	April 20, 1910	55,000.00	May 1 & Nov. 1	50,852.43	2,200.00	916.67
Illinois Central R. R. Co. Louisville Division & Terminal First Mortgage 3½% Gold Bonds. Due July 1, 1953	March 11, 1913	200,000.00	Jan. 1 & July 1	171,433.83	7,000.00	1,750.00
Duluth, Missabe & Northern Ry. Co. General Mtge. 5% 25 year Gold Bonds. Due January 1, 1941	Mar. 11, 1913, \$59,000.00 June 12, 1914, \$25,000.00 June 13, 1914, \$5,000.00 June 17, 1914, \$10,000.00	99,000.00	Jan. 1 & July 1	104,154.19	4,950.00	1,237.50
H. C. Frick Coke Co., 5% Pittsburgh, Monongahela First Lien Purchase Money Gold Bonds. Due January 1, 1925, to January 1, 1944	March 13, 1913	300,000.00	Jan. 1 & July 1	310,094.56	15,000.00	3,750.00
Chicago, Milwaukee & St. Paul Railway Co. General and Refunding 4½% Gold Bonds. Due January 1, 2014	June 30, 1914	250,000.00	Apr. 1 & Oct. 1	240,742.83	11,250.00	5,625.00
Carolina, Clinchfield & Ohio Railway Co. First 5% Mtge. Bonds. Due June 1, 1938	Nov. 16, 1914	200,000.00	June 1 & Dec. 1	191,333.10	8,722.23	3,333.34
<i>Total</i>		\$14,129,000.00		\$14,052,191.03	\$690,933.34	\$23,870.85

¹ \$200,000.00 par value redeemed October 22, 1914.

DIVISION OF EDUCATIONAL ENQUIRY

Schedule A, Exhibit 2

Securities	Date Acquired	Par Value	Interest due Date	Book Value	INTEREST	
					Accrued Year ending Sept. 30, 1916	Accrued Sept. 30, 1916
Chicago & Northwestern Railway Co. General Mortgage 4% Gold Coupon Bonds. Due November 1, 1987	March 10, 1913	\$1,000,000.00	May 1 & Nov. 1	\$1,000,000.00	\$40,000.00	\$16,666.66
Westchester County, New York, Registered Bronx Valley Sanitary Sewer District 4% Bonds. Due January 1, 1933, to January 1, 1974, inclusive	March 10, 1913	250,000.00	Jan. 1 & July 1	250,000.00	10,000.00	2,500.00
<i>Total</i>		\$1,250,000.00		\$1,250,000.00	\$50,000.00	\$19,166.66

ENDOWMENT ACCUMULATION
APART FROM ORDINARY INCOME AND EXPENDITURE ACCOUNT

SEPTEMBER 30, 1915

Schedule A, Exhibit 5

SEPTEMBER 30, 1914. BALANCE AT CREDIT OF FUND	\$120,000.00
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ADD:

Premium received Oct. 22, 1914, on redemption of \$200,000.00 par
value United States Steel Corporation 5% Bonds Series "B"

30,000.00

September 30, 1915. Balance per Balance Sheet

\$150,000.00

REPORT OF THE TREASURER

The treasurer has submitted from time to time to the executive committee statements of receipts and expenditures, which were printed and sent to all trustees. These statements, together with the report of the auditing firm just quoted, give a complete account of the financial operations of the Foundation for the period covered by this report.

ROBERT A. FRANKS, *Treasurer*

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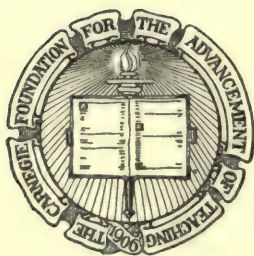
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THE CARNEGIE FOUNDATION
FOR THE ADVANCEMENT OF TEACHING

INDEX OF THE FIRST TEN ANNUAL REPORTS
OF THE CARNEGIE FOUNDATION

1906-1915



576 FIFTH AVENUE
NEW YORK CITY
DECEMBER, 1916

D. B. UPDIKE • THE MERRYMOUNT PRESS • BOSTON

The present Index of the first ten Annual Reports of the Foundation has been prepared at the instance of various teachers who are making use of these reports in the study of matters relating to Education

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